

**Proceedings of the
Twelfth Annual Conference of the
National Committee for the
Prevention of Blindness**



Let there be Sight!

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1926

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370 Seventh Avenue, New York, N. Y.

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Proceedings of
Twelfth Annual Conference of the
National Committee for the
Prevention of Blindness

Including
Joint Sessions
with
American Social Hygiene Association
National Organization for Public Health Nursing
Eastern Association of Indian Affairs

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Foreword

THE Twelfth Annual Conference of the National Committee for the Prevention of Blindness was significant not only in the practical application of its program and in the agencies co-operating, but in having stimulated so much interest as to make it requisite to publish the entire proceedings. It is further significant in that one meeting was set aside in commemoration of the founder and guiding spirit of this organization, Miss Louisa Lee Schuyler. In a larger sense, we may feel that not only this Conference, but all conferences of the National Committee have been and will be living tributes to her. Such dedication is perhaps not inappropriate, since it is ever for the living to dedicate their contributions to those whose gifts of spirit and life-blood continue long after they themselves are but memories.

There is a feeling that the words, "co-operation, co-ordination, and correlation" are much over-used. However, their practice constitutes the very vitality of social organization, and whether we like the words or find others that mean the same thing, no social welfare agency to-day operates successfully if it does not practice these principles. The National Committee for the Prevention of Blindness is not ashamed to use these terms. In this Annual Conference it offered testimony of its desire to co-operate, co-ordinate, and correlate its work for the greatest common good to society in preventing blindness and saving sight. To this end it planned and executed three meetings in co-operation with other nationally known and successful organizations, all of whose work has some influence in reducing the incidence of blindness and defective vision: The American Social Hygiene Association; The National Organization for Public Health Nursing; and the Eastern Association of Indian Affairs. In addition, the National Committee acknowledges gratefully the co-operation of all official and volunteer agencies who sent representatives to participate in the meetings, whether they came as speakers or listeners, for the whole spirit of the Conference was action, and every one who listened and was stimulated to do, is a co-operating agent of incalculable value to the prevention of blindness movement. To that spirit, and to the one who exemplified it, Miss Louisa Lee Schuyler, these Proceedings are dedicated.



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Part I
Relation of Syphilis to Vision Impairment

ELLICE M. ALGER, M.D., *Chairman*

AMERICAN SOCIAL HYGIENE ASSOCIATION
AND
NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS

Syphilitic Inflammatory Manifestations as Related to Vision Impairment

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It was somewhat difficult to determine what I could say on the subject that is not already familiar to a group of people so keenly interested in the prevention of blindness. It seemed to me, however, that there are two topics that we might discuss, and perhaps bring out the need of more information with regard to them: (1) The importance and the frequency of syphilitic infection as a cause of blindness and impaired vision; and (2) the methods at our disposal for preventing such disabilities.

Possibly those of us who are working in venereal diseases are apt to overemphasize the menace of syphilis to the eye; but perhaps, on the other hand, those who are working on the problem of blindness from other angles may not quite realize its importance.

It is surprisingly difficult to find statistics on this subject. To form any estimate, one must depend on scattered and somewhat fragmentary reports. One of the few direct statements is that of Widmark, who, in 1902, reported that 15 per cent of the blind in Sweden were syphilitic. The British Commission for the Investigation of Causes and Prevention of Blindness obtained little definite information. They reported, however, such figures as these: Of the total blind under care of the public institutions of England, 1,300 were blind at birth; 1,000, from birth to 16 years of age; 2,700, from 16 to 50 years of age, and 2,900 from 50 years on. In that 2,900 from the age of 50 on, cataract probably plays a very large rôle, and syphilitic conditions play a very slight one.

Of the 1,300 blind at birth and the 1,000 blind up to 16 years of age, it is difficult to estimate how many were syphilitic, because most of the syphilitic diseases of the eye that occur in childhood may result in serious impairment of vision but seldom place the victim in a home for the blind. However, Igersheimer found that 13 per cent of the children in the school for the blind in Halle had congenital syphilis, which is a rather significant figure. Of the very large group becoming blind through youth and middle age (16 to 50), the British Commission reported about 13 per cent due to accident. In such a group all the non-specific inflammatory conditions, as glaucoma, and so forth, would also be found.

But from what one sees of eye conditions in the syphilis clinic, one must feel that a very large group of those cases must owe their blindness to

syphilitic infection. Most of them probably are cases of optic atrophy, a subject which has been assigned to another speaker, but some of them also are blind as a result of inflammatory syphilis of the eye.

Statistics for this country are still more difficult to obtain. I thought we might learn something by looking over the report of a large eye clinic, but in one hospital that opened its records to me I found no statement as to the number of cases of syphilis admitted during the year. Of 10,818 new cases to the dispensary, nearly 5,000 were errors of refraction and accommodation, leaving about 5,900 with other eye conditions. In going through the laboratory reports we found 81 definitely positive Wassermanns reported during the year, which would make only 1.3 per cent of these general eye conditions due to syphilis. I think that is too low a figure to be representative. Whitney, at the University of California Dispensary, found that in the Eye Department 8.5 per cent of the cases were syphilitic.

We need more accurate information on this subject. It would seem important to know, for example, how many persons afflicted with blindness show a positive Wassermann reaction, how many have optic atrophy and how many had interstitial keratitis in childhood. We ought to know also what proportion of patients with inflammatory and degenerative eye conditions show evidence of syphilis. It is only in some such way that we can be brought to realize the importance of this disease as a cause of blindness.

I do not wish to attempt a discussion of the clinical and pathological features of inflammatory syphilis of the eye, but I would like to enumerate some of the types we see. In early congenital syphilis, as compared with other lesions, we see relatively few eye manifestations. Yet, going back to those figures of Igersheimer, we see that they are not rare. They are chiefly severe iritis, optic neuritis, and a certain number of cases of choroiditis and choroidoretinitis. When one thinks of the serious consequences of these rather infrequent conditions, their importance cannot be minimized. What we commonly think of as congenital syphilis of the eye is the interstitial keratitis which comes later when the child is from seven to fourteen years of age. This is bilateral in roughly half the cases and, while it seldom produces complete blindness, it often leads to disabling impairment of vision. As such, I think it comes well within the scope of social hygiene and prevention of blindness.

In acquired syphilis the condition we see most frequently by all odds is the acute iritis. Acute iritis, which may extend and involve the ciliary body and cause serious damage to the eye, usually occurs during the first year of syphilitic infection. At this stage syphilis is relatively easy to treat and easy to control, and iritis is a lesion that is rather amenable to proper treatment. If attacked early, it seldom leaves serious impairment of vision, but if neglected or improperly treated, the results may be disastrous. This is the most frequent eye complication in early syphilis.

Going on to the second or third year of the disease, at the period when neuro-relapses occur, we meet with cases of inflammation of the optic nerve. Optic neuritis is, of course, often caused by other infections and intoxications, but it may be due to local syphilitic infection or result from syphilitic meningitis at the base of the brain. This is a far more menacing condition than iritis, but if detected early, usually responds to vigorous treatment. Syphilis may also cause destructive inflammation of the choroid and retina and is perhaps the most frequent cause of paralysis of the eye muscles. These so-called tertiary manifestations may occur at any time after the second year of the disease.

Later on, perhaps ten, twenty, thirty years after the infection, another type of nerve condition, progressive optic atrophy, is seen. This is the most serious and awful menace of syphilis to the eye.

I am particularly glad that this Committee is willing to spend time in discussing this subject because I think the problem is essentially a hopeful one. Syphilis is a disease that we can combat. I think the very remarkable result which has been obtained in the reduction of ophthalmia neonatorum (a problem in which our prejudices and psychological difficulties are equally tied up) warrants us to be very hopeful of what may be accomplished in combatting syphilis of the eye, and indeed much is being done.

There are really three lines of defense. The first is the prevention of syphilis. This is a peculiarly difficult problem, and many methods which have been brilliantly successful in other infections (vaccination, for example) are ineffective. Methods are available, however, which, if properly developed and applied, would greatly reduce the incidence of this disease, namely, education, legislation and medical aspects.

Education with regard to syphilis may sound like a strange thing to advocate, but it is necessary, and I do not think we will get very far with the prevention of syphilis until its problems are more generally and better understood. The American Social Hygiene Association is doing excellent work in this regard.

Legislation has been tried for several centuries. It may have done something, and it may do something in the future, but it is not a particularly hopeful method.

The medical aspects may be viewed from several different points, especially from the points of view of prophylaxis, of early treatment, and of treatment of the eye condition when it develops.

The situation in regard to venereal disease prophylaxis is astonishing. Twenty years ago Metchnikoff, working at the Pasteur Institute in Paris, devised a simple method for preventing syphilitic infection and showed by convincing experiments that it was effective. The first extensive application of the method was by the Medical Corps of the United States Navy, soon followed by the Army. In 1913-1915 it was used successfully in isolated posts and was finally officially adopted before our entry into the

World War. During this war its efficacy was proved, it seems to me, beyond any question, and yet, because of lack of information, in part, prejudice to a large extent, and legal obstruction to an even larger extent, it is practically unavailable for the protection of the general public. It is a disagreeable subject, and one we do not like to discuss, but the shocking thing to me is that here is a means by which an enormous amount of syphilis could be prevented and it is being utterly neglected. The facts are fairly well established in the reports of army physicians, which are available to all. For example, the figures for the American Expeditionary Force in Bordeaux showed only 1.7 per cent of any venereal disease in men who were given prophylaxis. Churchman, in his summary of the subject in Nelson's *System of Medicine*, says that the general adoption of venereal prophylaxis would do more to banish venereal diseases than all the laws that can be thought of. This is why I intrude on this assembly with a discussion of this subject. The only way you can remove prejudice is by information. I think that one thing we can all do is to use what influence we may have to remove the prejudice that exists as to this method of preventing syphilis.

Our second line of defense is the early treatment of syphilis. To realize its importance we must understand that the purpose of early treatment is not so much to relieve the early symptoms of the disease (though this is of course one object) as it is to stop the course of the infection and prevent the later and far more serious symptoms. Early treatment is also an important factor in preventing the spread of the disease because it quickly renders the patient non-infective. This field, in contrast to that of the prophylaxis of syphilis, has been very well and effectively developed.

It is difficult to express the results obtained in figures, but I think that those who have had the greatest experience in this work are convinced that in most early cases proper treatment can arrest the disease. Whether it is arrested, or cured, is an academic question about which there is much difference of opinion. The significant point is that patients so treated do not, in most instances, develop further symptoms of the disease. This is a fact. The time to attack syphilis of the eye is not after an atrophy of the optic nerve has developed, but during the first months of infection when there are no symptoms whatever of eye involvement. There can be little doubt, I think, that the proper, thorough, consistent and persistent treatment of early syphilis is an effective means of combatting syphilitic infection of the eye.

One important phase of the treatment of early syphilis is the prenatal care of infected mothers and the treatment of newborn infants. This was work in which the late Professor Fordyce was deeply interested, and he developed at the Vanderbilt Clinic, in connection with the Sloane Hospital for Women, one of the first clinics where this work was consistently carried out and where its effectiveness was demonstrated. It is now the practice in many obstetrical hospitals to perform routine Wassermann tests

on all expectant mothers. Many are found to be infected, though they have never shown symptoms of the disease. We now feel rather confident that if these mothers can begin treatment in not later than the fourth month of pregnancy, they will give birth to normal children. These children, without receiving any treatment themselves and without especial care, grow up with no evidence of syphilitic infection. We always test such children, of course, and try to follow them up, but it is the rare exception to find them infected.

The routine testing of newborn infants is also of great importance, because it has been shown that in the early stages congenital syphilis (like acquired syphilis) can be arrested. Infants thoroughly treated show persistently negative blood tests and, so far as our present experience goes, do not develop the later symptoms of the disease. There seems little question that we have in these methods a means of making interstitial keratitis in children a very rare condition.

The third line of defense is the treatment of eye conditions after they develop. The inflammatory eye conditions affecting young adults with acquired syphilis are fairly amenable to treatment. The later degenerative changes are much more difficult to control. Even optic atrophy, however, is not so hopeless a thing as we used to believe.

What I have tried to show is that any comprehensive campaign for the prevention of blindness must include measures for the prevention and treatment of syphilis, which is one of the important causative factors. I would therefore ask the support of those interested in the prevention of blindness for these three phases of the work which is being done in combatting syphilis: 1. The prevention of infection; 2. The early systemic treatment of the disease before the development of ocular symptoms; and 3. Diagnosis and effective treatment of eye conditions when they develop.

Toxic and Degenerative Manifestations as Related to Loss of Vision

RANDAL HOYT, M.D.

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I was very glad to hear Dr. Hopkins sound the note of optimism regarding the treatment of syphilitic optic nerve atrophy, for I believe the time has arrived when one is justified in feeling optimistic not only about this form of neurosyphilis, but about neurosyphilis as a whole.

At the New York Skin and Cancer Hospital Clinic we assume in every individual who has syphilis (even in its earliest stages) that organisms that cause the disease are in the blood stream; that they are distributed generally throughout the body, and that they invade the nervous system as well as other tissues of the body. With the conception in mind that an individual, even though he is in the period of chancre formation, has what we call the *Treponema pallidum* in his nervous system, it gives us a tangible and definite objective to study and it gives us something in the way of treatment to endeavor to prevent.

Our procedure in this clinic is to examine neurologically every patient the first time that he is seen. I do not wish to be too critical, but generally speaking, it seems to me that the average neurological examination given to a syphilitic patient might be compared with listening to the one apex of the lung with the ear and, because no signs of cavitation are heard, saying that the patient does not have pulmonary tuberculosis.

To examine the nervous system is to examine it from head to foot. We must test every function that is available to demonstration. That having been done, we then check our cases with spinal fluid serology. Sometimes the tests have to be repeated, but the facts that we are commencing to get out, I believe, in the course of time, will prove worth while. I think without any question we are becoming able to identify neurosyphilis, and I mean symptomatic neurosyphilis, before it has produced subjective symptoms. Then, of course, after having established the diagnosis of neurosyphilis or the suspicion that neurosyphilis exists, comes the problem of treatment.

In 1916 Dr. Zinnser, I believe, in conjunction with Dr. Hopkins, wrote what seemed to be an epoch-making paper on "Medical Studies and Immunity in Syphilis." I think it is a paper well worth reading. It emphasizes the fact that syphilis is not some ogre that marches through the body and destroys one point here and destroys another point there, but that it is a conflict between a certain type of germ versus the bodily

tissues. Dr. Zinnser emphasizes the fact that the resistance of the tissues to the *Treponema pallidum* is somewhat unique. In most instances there is an endeavor on the part of the body to destroy an invading organism. In syphilis, unless something has appeared most recently, it is generally believed that the reaction on the part of the body is purely defensive. It is a reaction that might be compared to a country that is invaded by an army and the invaded country then establishes a line of trenches. It does not counter-attack, but it stays there ready to prevent further invasion. How efficient this defensive mechanism is, is evidenced by the fact that in the primary and secondary stages of the disease, symptoms subside spontaneously. In other words, the defense is strong enough so that after a period of from a month to six weeks the disease is held in a stage of defense and it enters what is known as a stage of non-reaction. To all intents and purposes, so far as the patient himself is concerned, he is well, but he lives always in the constant danger that his ability to maintain this state of non-reaction may break down, and having broken down, it then tends to become progressively worse.

This is what apparently takes place in neurosyphilis as well as in other manifestations of the disease. We will very frequently find in primary and secondary syphilis signs of abnormal nerve function. We are very much surprised to find this because it has been so frequently written that there is no use in examining these patients, and yet we do find peculiar symptoms, such, for example, as anesthesia of the face to the sense of pain. That is a common early symptom. In other cases, the ability to discriminate the sense of heat in the lower extremities is apparently diminished. In others there will be a little oscillation of the eye. In other patients, when we perform aviation tests, that is, where we turn the patient around in the chair, we find that the reactions are frequently diminished.

There is one case that I have in mind—a young man who was a sailor. He came to the clinic at the end of the primary stage. We examined him and we found facial anesthesia. We tested his spinal fluid and we found that it was negative. He was placed under ordinary treatment. We were in doubt as to whether the anesthesia was in any way related to syphilis or whether it was due to his exposure to the weather, but there were two things that led us to believe that it was a syphilitic manifestation. In the first place, it completely disappeared after about a month's intravenous treatment. The second confirmation was that we were treating a similar case, a man who had been infected nine months previously, who had facial anesthesia and a dilated pupil, and whose spinal fluid was very strongly positive. The latter patient was a man who had acquired a strongly active neurosyphilis within nine months. In our first case the disappearance of this anesthesia led us to believe that the original reaction of the nervous system had passed over and that we were dealing with a nerve tissue in which the defense mechanism was fairly

adequate. In the second instance the defense mechanism was not so adequate.

In studying our cases we do what we can to enable the body to maintain its resistance and preserve its state of non-reaction. Of course, there is no need of my telling you about the specific treatment of syphilis. We all know about intravenous treatment and we all know about intraspinal treatment. Some of these outside measures perhaps later will not prove to amount to anything at all, but it is rather a fascinating subject to investigate. There was one man who came to us, as I remember, in 1920. That is seven years ago. This man had been infected twenty years previously. He had consulted a physician, who recognized the primary source and told him it did not amount to anything and that it would go away. It did go away and nothing happened for a period of eight or ten years. Then the patient commenced to get periodic attacks of tonsillitis. These kept up for a few years, and in a little while he began to suffer with pains in the legs. He went to another institution, where the diagnosis of tabes was made both clinically and serologically. He was given a rather grave prognosis. Then he became discouraged. He had received only two intravenous injections of salvarsan. He came to our clinic. We were at that time seeking some of the causes that influence the defense mechanism. We were wondering whether focal infection had any such influence. When we examined that man's throat, we found that his tonsil was simply loaded with pus. We examined him neurologically. We found, among other things, that he had a marked ataxia and that he had a beginning optic nerve atrophy. Our first procedure in carrying out our investigations was to have his tonsils eliminated. We then put the patient under routine intravenous and intraspinal treatment. He was kept under that for a period of from two to three years. The result is his spinal fluid is now absolutely negative; his blood is absolutely negative; his optic nerve atrophy has not progressed. He comes into the clinic very proudly and stands up with his feet together and closes his eyes to show how well he can stand up, and his station has returned. We have had him under observation for about seven years. He may be an exceptional case and turn back, but we have quite a number of cases that are running similar courses.

There is another point in special reference to optic nerve atrophy that we are at present investigating, and that, as you know, is that non-syphilitic patients' optic nerve atrophy is sometimes caused by infection of the sphenoidal sinus. There is a large cavity beneath and above the floor of the skull that is a rather narrow bony wall and on top of that are our optic nerves, and, for some reason, as a result of this sphenoidal sinus, the optic nerves are involved secondarily and are degenerate.

We have been wondering whether some infection of the sphenoidal sinus could not predispose to syphilitic optic nerve atrophy and we have not enough of such cases as yet to come to any definite conclusions except

to say that in one or two instances we have found by the *x*-ray a great deal of cloudiness in the sphenoidal sinus.

I do not want you to take what I am saying as facts. They are simply investigations that we are carrying on. Of course, in a serious condition such as optic nerve atrophy, we ought to cover every single detail and, so long as any therapeutic procedures are fairly simple, such, for example, as removing a patient's tonsils or by some simple means draining his sphenoidal sinus or investigating those points, I believe they should be done. Finally, the fact which stands out above all others is that syphilis lasts a long time and requires a very long period of treatment. The important factor is to keep patients under treatment until complete cure is effected.

Minimizing Vision Menaces in the Luetic by Adequate Social and Follow-up Care

WILLIAM F. SNOW, M.D.

General Director, American Social Hygiene Association, New York, N. Y.

In this series of talks this morning the parts which the general medical profession, the nursing profession, and the trained social worker groups play or should play, should be stressed. Of course, behind these groups, so far as prevention is concerned, we have the health officials, state and local representatives of the public, steadily organizing, correlating, stimulating, practising preventive and follow-up measures.

Perhaps I can best illustrate some of the difficulties of those groups by referring to some of the studies which the American Social Hygiene Association has attempted to promote in the last several years. I can mention, for example, the demonstration in follow-up methods in a syphilis clinic in co-operation with the Associated Out-Patient Clinics,¹ a study of case records in the Charity Organization Society,² the study of follow-up of venereal disease patients under treatment in private practice,³ and the study of the frequency of syphilis in general medical practice, and the length of time syphilis patients are kept under control. I have selected the last one for special comment. This study is being conducted in New York, centered about the medical profession of Kings County. We have been attempting to find out what the private practitioner does with the syphilis patient, and at the same time what the Brooklyn Hospital and out-patient clinic and other institutions are doing with this problem.

Dr. Alec N. Thomson, who has immediate charge of this work and is the Secretary of the Public Health Committee of the Medical Society of the County of Kings, decided that it was desirable in the first year or two of this study to eliminate the specialists' records. One of the first surprises of this study was that each doctor assumed that the other doctors of the Society had more cases of syphilis to deal with than he had. Many of them have said: "Well, of course, I don't make a specialty of dealing with syphilis; I don't have many cases. I treat those cases only when I can't turn them over to a specialist, or when they appear in my practice for one reason or another and I have to follow them up." It

¹ Fisher, Henry A.: Study of the Value of a Follow-up System in a Syphilitic Clinic. *Journal of Social Hygiene*, Vol. X, No. 8, Nov., 1924.

² Unpublished report.

³ Brunet and Edwards: Follow-up Problem of Venereal Disease in Private Practice. *Journal of Social Hygiene*, Vol. XII, No. 8, April, 1926.

was also found, even among the physicians who are quite ready and willing to treat syphilis and glad to have such cases, that there were those who have not seen as many cases in recent years as they had in previous years.

If it is important to emphasize social service follow-up in clinics to keep people under treatment once they are diagnosed as having syphilis, is it not equally important to do so in private practice? The answer theoretically is "yes." We therefore questioned: "Is it true that follow-up methods are as well applied in private practice as in clinic practice?" The data secured indicated that from 40 to 50 per cent of the cases that come to a clinic need some sort of definite follow-up method to get the best results from diagnosis and treatment and to keep the patient under treatment until he may safely be discharged. In the private practice series only 12 to 20 per cent of the cases were said to require follow-up service. In this particular study practically all of the hospital cases urgently needing follow-up service received it, but in the private practice it was very difficult to determine just how far satisfactory follow-up service was provided.

In the clinics, where we have had a chance to study carefully the question of communicability of the disease at the time the patient first appears, probably 25 to 30 per cent of the cases are in a communicable stage at that time and perhaps 5 per cent leave or drift away from the clinic in a communicable stage in spite of every effort at follow-up. In private practice approximately the same number, 25 per cent, are communicable on applying for treatment, but probably less than 5 per cent are dangerous either to themselves or to the community when they cease going to the doctor.

Out of a considerable group of cases from the Brooklyn Hospital Clinic studied with a view to seeing how long they could be kept under needed treatment, 72 per cent were properly controlled, 28 per cent were lost from the clinic for unsatisfactory reasons; about 70 per cent in the practice series of cases might be termed as satisfactorily controlled, and about 30 per cent, uncontrolled. Reports on the private case series indicate that private practice and clinic service do not differ in respect to follow-up as much as we originally supposed might be the case.

Through questionnaire methods in other communities we have found that physicians believe that about half their cases appear for treatment later than they should and stop treatment before they are properly controlled. It is generally believed that a considerable proportion of those who leave treatment before they are discharged are in a condition to communicate their infection to other persons.

The follow-up methods in the case of syphilis are practically the same type of follow-up methods that has been so successfully used in tuberculosis and in other diseases, the difference being that we must apply it much more tactfully because of the moral and social implications. In these diseases, since the necessary period of treatment is so long drawn

out, the personal affairs of the individual very frequently necessitate either his changing physicians or his clinic hours or other details of the conditions under which he pursues his treatment. All these things mean case work of a very high order and of a great persistency.

I do not understand that it is your purpose in this program to go into the details of such follow-up methods. They have been demonstrated by many institutions as applicable to syphilis. Some of the first and most thoroughgoing demonstrations of which I know were carried out in the Neurologic Clinic, New York Skin and Cancer Hospital, and have proved that it can be done if we have the money and personnel with which to do it. This has also been shown in the Massachusetts General Hospital, Boston, Massachusetts, and of course in Dr. Lewis' work in the institutions in Buffalo with which he has been connected. Our greatest difficulties, I think, have been the ignorance of the public and the lack of understanding on the part of the patient of the dangers not only to himself, but to others associated with him.

You are familiar with what has been done in the past few years in joint studies of such agencies as the National Committee for the Prevention of Blindness and the American Social Hygiene Association, and by joint meetings such as the one in Atlantic City last spring. Since we have been fortunate enough to secure the services of a medical director with the wide experience and acquaintance with public health officials which Dr. Royer has had, even more frequent and profitable work of this character may be expected.

The subject of prophylaxis was brought up at this meeting. I suppose none of us knows exactly how much of the 56 per cent reduction in blindness at birth in the past seventeen years is due to an effective attack upon ophthalmia neonatorum, but certainly part of it is. I know that the message I took westward many years ago from Dr. Park Lewis about attacks upon gonorrheal ophthalmia has had some part in similar reductions in the State of California. I speak of that because it illustrates prophylactic measures. I think it is a lesson in application of science. Every health officer in the country has been eager to do anything he can with prophylaxis in this field as in any other field. Every health officer in the country has tried to promote prophylaxis against venereal diseases, and so far as gonorrheal ophthalmia is concerned, laws have been secured, appropriations obtained for distribution of drugs, regulations made in regard to midwives and physicians, and all practical measures have been applied administratively which would tend to make such prophylaxis really effective. These results have been accomplished because we have had a scientific fact that is clear; we have had measures worked out by our ophthalmologists which are sound; and then we have had our health officers who could take these up administratively and apply them. We have had no complication with moral questions or with personal liberties, because the newborn child is obviously an "innocent victim." Every one

has agreed to the slogan that is on the cover of the National Committee's pamphlets, "Good eyesight is the birthright of every child."

The difference between prophylaxis of gonorrheal infections in the newborn and prophylaxis of gonorrheal infections in the adult is not one of principle nor of science: it is one of administration, and of articulation of our administrative measures with other measures which society desires to enforce. We have not yet worked out a practical procedure. How can we apply administratively with effectiveness and soundness the same principle in this adult group of cases which needs prophylaxis? We have not yet found an answer except in such groups as Dr. Hopkins has mentioned, that is, in armies or in other groups where we may practically do what the ophthalmologist does. He says: "Put this child when it is newborn in the hands of the physician and the physician will apply treatment which will prevent the development of infection."

He does not advocate self-treatment on the part of the child or the mother; even the midwives are followed up and trained to use the silver solutions properly. In the army prophylaxis is not self-applied, but is applied by trained personnel, that is, by sergeants and others in charge of prophylactic stations. We have not learned how to transfer that sort of administrative procedure over to civilians efficiently. There are many serious questions relating to personal liberty and to moral codes which must be considered, as well as practical administrative questions, before our health officers and physicians can apply such prophylaxis to adults. I think the situation is not at all without hope, but it is one of those things which we have to develop slowly and step by step. I agree entirely with Dr. Hopkins that we ought to emphasize the importance of the matter. On the other hand, I think it is quite understandable that our health officers and physicians must leave that measure on the shelf for an uncertain period of time, until we work out a thorough and practical procedure.

Dr. Hoyt has spoken of the importance of neurological examinations in diagnosing syphilis. I suppose next to the serological examinations, the neurological ones are most essential; and I think I should put third, the examination of the eyes.

The general practitioner can aid the oculist to detect syphilis by bringing to his attention impaired eyesight; and the oculist in turn can refer such cases to the syphilologist for effective treatment. You have heard how many symptoms of syphilis are related to the eyes.

It seems to me that the National Committee for the Prevention of Blindness can do for the prevention of syphilis a service such as it has done for the prevention of gonorrhea through its attack upon ophthalmia neonatorum. We early found in the field of social hygiene that whether or not it was theoretically practical, there were difficulties in talking about gonorrhea as a cause of blindness. And this Committee has found that it was not wise to emphasize that as an exclusive cause. The practical fact is that the public wants to have big slogans and big movements

put before the people, which are not difficult to talk about publicly and generally. It is sound policy to absorb gonorrheal ophthalmia into the whole picture of ophthalmia, and put it before the public under the general name of conservation of vision and of prevention of blindness. In the case of syphilis I think much the same thing can be done. If we can join the attack upon syphilis of the eyes and of the central nervous system with the general question of conservation of vision, we can get a great deal more done than has hitherto been possible.

This Committee is putting forward a big, concrete and hopeful picture of conserving eyesight, and bringing under control diseases which impair eyesight by putting the emphasis on slogans of early diagnosis, early treatment, follow-up until that treatment is effective, and the individual is no longer in danger himself or a danger to others. In this endeavor the Committee helps itself and, at the same time, other agencies with which it is associated. The pamphlets which this Committee has published in the past year or two are, I think, most effective.

I have digressed from my assigned subject, but the whole question of follow-up service is really made up of all the things of which I have been speaking. The Committee has a slogan, "Go and have your eyes examined," that is just as safe to talk to the public about as "Go and have your teeth examined," or "Go and weigh your baby." This is different from anything a society for the prevention of syphilis could do. The American Social Hygiene Association, for example, cannot say in a layman's pamphlet, "Your baby's teeth are peg shaped, maybe it has syphilis," without unduly frightening many people. The Association can co-operate with the dentists, however; and it can co-operate with this Committee similarly. It seems to me that the National Committee for the Prevention of Blindness has the right to expect the warmest and most effective assistance and co-operation from other agencies on the one hand and, on the other, it is challenged to do a great many things for other fields of preventive medicine which those fields cannot accomplish by themselves. I think that in saying these things I speak probably for the public health officials as well as for the general practitioner and the nurse and the social worker who are all concerned in this question of follow-up and the application of our preventive principles.

You have here in your group some outstanding health officials in America, and in the discussion I hope they will tell you of some of the follow-up work they are doing in their states.

The Ophthalmologist's Relation to the Luetic Patient

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There is a story of an Oriental potentate who dreamed that all of his teeth fell out and he felt that it implied some serious portent. He sent for his wise men and asked them to explain it to him. One came with his head bowed and in great trepidation said, "Oh, wise sovereign, it is an omen of saddest import. It means that you are going to see all your friends and relatives die." And he was immediately taken out and bowstrung. The Sultan then called for another wise man who had interpreted more according to his liking and this one came in with his head in the air and with joyful mien. "Oh, happy, happy sovereign," he said, "such a fortunate omen is this. It means long life. You are going to outlive all of your friends and all of your relatives." And he immediately was placed in a position of high honor.

A great deal depends on the way a thing is said and Dr. Snow has brought it out more forcefully in his remarks by not emphasizing the nature of syphilis. There has developed during the last few years what might be termed "syphilophobia" or, as the disease became more commonly known, an unwarrantable dread of syphilis, because there is an extended period, very often, in which syphilis is not infectious. I have within a short time seen disastrous consequences in families just because of this apprehension as to what might follow after the disease was no longer communicable.

During the last few years we have gone through a remarkable change in our attitude toward life. We are dealing much more frankly with matters of vital import. This attitude is manifested in every phase of life, not merely in social relations but in everything else with which we have to do. The young people of to-day are determined that they are going to face facts as they are, and they are not making any false pictures with which they may be deceived. They want to know the truth. Thus we find that the names of the so-called social diseases are no longer taboo. They are subject matters often even of parlor conversations, and the possibility of the disasters that they produce and what they signify are freely talked over with a degree of frankness which in some measure is desirable. It may take away some of the illusions but it makes possible dealing honestly and straightforwardly with the things with which we are coming in contact every day.

There are resultant advantages and disadvantages. In the first place there is that to which I have referred: the possibility of overestimating dangers and sometimes exercising judgments too harshly. The only remedy for that lies in wider education. If we get wrong or distorted ideas, the only way in which we are likely to get rid of them is by re-adjusting our viewpoint in regard to the situation and getting clearer notions in regard to the problem to be solved.

The gentlemen who have preceded me to-day have spoken with the characteristic reserve of scientific men, and I think because of that moderation we may not have quite grasped the importance of some of the things that they have said. For each one of the speakers has brought out matters that were not only important but relatively new, and they are of great value.

Some one has said that if you want an idea apprehended it must be repeated five times. The first time it is not heard, the second time it receives no attention, the third time it isn't understood, the fourth time it isn't believed, therefore it is necessary to say it a fifth time. So I may be permitted possibly to emphasize one of the many important things that each of these speakers has said. Dr. Hopkins spoke of interstitial keratitis. Let me tell you a little bit about interstitial keratitis, because it is one of the things that we meet very frequently. As Dr. Hoyt pointed out, it is one of those diseases that come to the child suffering from congenital syphilis anywhere from four to 18 or 20 years after birth. A surgeon of eminence recently undertook to study the records of the clinic in London that in its beginning till his death was under the care of Jonathan Hutchinson and from then under the direction of Dr. Spicer, who collated these figures. He took all the cases of interstitial keratitis that could be gathered during, I think, nearly seventy-five years, brought them together, and embodied them in an exceedingly valuable essay. The conclusion reached concerning keratitis interstitialis was that "this remedy has been used but with very little result," and "that remedy had very little benefit," and "this and that have been used," but there was not a hopeful promise of cure in the whole thing; it showed that the remedies that had been used during all of those seventy-five years had not been markedly beneficial.

Dr. Derby has been more fortunate. He read a paper before the American Medical Association some years ago in which, from data in his own clinic, he showed results that most of us have not been able to secure. He spoke with much more optimism in regard to the possibility of beneficial treatment in this pernicious form of eye disease due to inherited syphilis. But the fact remains that after the most favorable cases have been eliminated there are left so many with defective sight, that they constitute a considerable percentage of those who enter schools for the blind.

One of the many important things that Dr. Hopkins brought out, and it needs to be emphasized and repeated again and again, is the enormous

benefits that have come from prenatal treatment of the syphilitic mother. In the prevention of blindness alone, prenatal treatment is at least as great a discovery as Credé's use of silver nitrate as a prophylactic in ophthalmia neonatorum.

Dr. John A. Fordyce taught this several years ago and it has been developed since by obstetricians throughout the whole country. Such men as J. Whitridge Williams, of Johns Hopkins, say unqualifiedly that 90 per cent of the children born of syphilitic mothers who have had four or five adequate treatments before the birth of the child can actually be guaranteed to be normal.

Think what that means! A child not only handicapped by the defective vision in later life, but with all the stigmata of syphilis which is shown in the face, the deformed head perhaps, the scarred lips and very frequently a dullness of mentality, which it cannot be expected will improve. If it is possible by any preventive measures to avoid a tragedy of that kind by the treatment of the expectant mother, it is of inestimable importance to the whole world. It would seem that there ought to be a united effort made to have that fact not only made clear but given publicity so that it could be brought to the attention of every possible syphilitic woman who may become a mother. What would she not give for the assurance that the baby she is to bring forth will be normal? The very first question that every mother asks of the physician after the infant is born is, "Is the baby all right?" That is the one thing she wants to know. There is no mother, no matter what her position in society, who would not make every effort possible, if she realized the importance of it, to get the treatment necessary to enable her to bear a normal child instead of one who will be a burden to society and have defects which will make life hard for it as long as it lives.

That is the first point that Dr. Hopkins emphasized, and I want to say it again in expressing the thought that a thing has to be said again and again in order that it may sink in. I find that true in my own case. I hear things many times and say to myself, "Well, I heard that a year ago." But it did not impress me profoundly. It simply caromed off the mind, so to speak, and I did not get it. But this is a thing worth remembering. We are getting from clinics all over the country corroboration of the fact that the syphilitic pregnant woman is peculiarly responsive to medical treatment. In no better way can the possible blindness of the child be more effectively warded off.

Dr. Hoyt made an important contribution in regard to the early recognition of the manifestations of syphilis in the less noticeable neurological manifestations. I think most of us have overlooked the fact that there always must be beginnings of every diseased condition and that these beginnings are often so slight and subtle that they are likely to be missed unless they are sought for and emphasized. They do not, as the French say, "jump to the eye." They have to be searched for and tests have to

be made in order that we may discover their existence. It is just at this period that treatment in preventing the eye involvements will be of greatest value. It so happens that the ophthalmologist is in position often to see some of these manifestations at an earlier time than any other physician.

In speaking of the proportion of cases in one of the large clinics for diseases in the eye, Dr. Hopkins stated that 5,000 in 10,000 were refractive and in that 5,000 were included all of the other conditions. If that other 5,000 were analyzed, it would probably mean that it would include operative cases and injuries of all kinds, as well as merely eye diseases. As a matter of fact, I think in private practice that will not hold good.

To-day we refract practically everybody. Almost every patient who goes through the hands of the ophthalmologist is refracted because the reflexes that come from eyestrain bear such an important relation to general conditions that the examination of the patient is not complete until the refraction has been taken. Many hundreds, therefore, pass under the ophthalmologist's observation in whom no disease had been suspected, thus giving him an opportunity of noting the characteristic eye reflexes that might not otherwise be observed. The proportion of cases in which syphilis is the direct cause of eye diseases is again difficult to determine because we are doing what was not done some ten or fifteen years ago—we are getting at the root, not merely treating symptoms. We are trying to find what is the matter with the patient and the matter with the patient is frequently not one thing only. As Dr. Hoyt brought out in his case of neurosyphilis, there were pus tonsils. They may or they may not have had a syphilitic origin. They may have been purely focal infections. The bearing that those things have on the whole condition is now recognized and we are taking into account in the study of the patient everything that has to do with the origin of disease. The whole individual has to be examined so that we really know something about him when we have completed our examination. We find that several causes may exist at the same time and each may be important.

Unhappily, a few years ago we had not the authority to speak as hopefully with regard to locomotor ataxia in its relation to blindness from optic nerve atrophy as Dr. Hoyt does to-day. Such results were not obtained. Ten or fifteen years ago the number of cases in which we could hope for the retardation of the optic atrophy of locomotor ataxia was infinitely small. I had two very unhappy cases, both in men in whom the disease affected the optic nerves, and sight was slowly being wiped out. They asked me quite frankly what the possibilities were for getting better vision than they had. The optic discs were white. The retinal vessels were mere threads. They were almost blind. I could give them no promise of improvement. Shortly after both were found dead, the result of their own acts. These are unfortunate cases. There is a note of hope in that a specialist in syphilis can come to us and say that

by our modern methods, such as the intravenous use of arsenical preparations, we may stay the progress of those nerve changes that so disastrously affect the sight. It is a great thing that we are able to tell our patients that hope is not gone. Hope is the one thing that Pandora left in the box, and if we have to take away that last gift, it is a sad and depressing thing to do.

A great deal has been said about the eye reflexes. Those are not quite so easily taken as one would imagine. One might think that we can look in the eyes and immediately tell whether or not the pupils react normally. It cannot be done so easily. It has to be done after a definite method or else we are likely to form misleading conclusions. As a matter of fact, the pupillary reflexes are among the earliest and among the most trustworthy of the symptoms that we have as indicating an invasion of the nervous system. It so happens that the various nuclei of the third nerve are in peculiarly vulnerable parts of the brain. A gummatous tumor in the fourth ventricle or elsewhere in the optic nerve paths, sometimes hemorrhagic, may so involve those nuclei that we begin to find the nerve-fibers coming from them to the pupil are directly involved. We have then the Argyll-Robertson pupil, unaffected by light but contracting in accommodation; we find the pinhole pupils—these are more easily seen. The pupils do not dilate when the light is dimmed and we can see them more easily. Those in which there are differences in size of the pupils, in which one is dilated and one is contracted, are not so easily seen. In order to see them properly one needs a proper light. If the light is insufficient the unaffected pupil may enlarge also. If one has a large pupil, it may or may not contract. The examination in accordance with definite methods can be easily acquired, but the examination should be made only that way. We may draw wrong inferences from what we see. There may have been an iritis, and sometimes a pupil is contracted or it is distorted because it is adherent to the lens capsule underneath. If we conclude from this that the pupil is not of normal shape or that it does not react normally, we may be right in the fact but wrong as to the reason. Moreover, none of these observations is conclusive. They are suggestive. There are other neurological conditions which are not syphilitic which may affect the eyes in these ways, too. These are landmarks; they indicate the necessity of a complete neurological examination from which the actual condition may be determined.

We have been doing some rather interesting work in regard to the railroad employees in this matter; it is not by any means complete, but there has been an endeavor on the part of some of the railroads to test out the men in regard to their eye reflexes. I am afraid the testing is not always reliable because unless it is done by medical men it is not of much value, but when it is done by those who are skilled in the management of it, we frequently get results that are extraordinarily valuable. If we find only one man in whom the indication is, we will say, a drooping lid, or

irregular pupils, and get that man under treatment which will save him from paresis or from optic atrophy, it will be worth while as an economic measure alone, aside from the humanitarian factor entering into it. It would pay even to spend public moneys to keep a man an asset instead of allowing him to become blind and a helpless liability.

If we could only apply the ideas that have been so admirably outlined by some of the previous speakers and have it more widely known how successful is the treatment of the pregnant syphilitic woman, that in itself would be worth all the efforts that these combined associations could make.

We are meeting one rather serious difficulty for which I do not know the answer. Dr. Alger, our chairman to-day, has said that the ophthalmologist does not treat his syphilitic cases. He does not. He sends them to whom? Well, he may send them to the family physician. There is no assurance that that particular family physician will be an expert in the use of the necessary measures that are required for the treatment of syphilis. I believe our younger men are being pretty thoroughly and adequately trained. Many of the men of my period were not. These new measures have come in within the last ten or fifteen years, and many of the men who were in the habit of treating syphilitics with mercury and inunctions and the simpler methods, have not acquired the technic necessary for the administration of the new measures. What are we going to do? Suppose we have a patient who comes from a man of that kind. The specialist is put in a most embarrassing position. He must send his patient back to the man's own physician. He may urge upon that physician the necessity of continued and adequate treatment, but he cannot always succeed in getting it carried out. Left unfinished or wrongly given, the condition will be in no way bettered.

Another rather embarrassing question comes up with regard to the commercial relations between the patient and the doctor. It sometimes happens that the patient stops treatment when he should go on, because he feels that he cannot afford it. He does not necessarily come to the doctor and say, "Now, I can't afford to meet the requirements; I can't pay my bills." If he were to do that it might be arranged. It has been very well stated when it was said that the difficulties are not with the poor or with the rich, for they get satisfactory treatment. But the respectable middle-class families who are limited as to money often find it a difficult thing to get all the complicated examinations made which are necessary but expensive, and to carry through the treatment in the way it should be done. If this can be solved, I am sure we would all feel very grateful.

Discussion

DR. H. D. LAMB (Missouri Association for the Blind, St. Louis, Mo.): I appreciate very much the opportunity of being here and saying a few words about conditions in Missouri. In Missouri we have been able to

get figures on the causes of blindness by means of the pension for the blind which was started there in 1921. Cases were examined by eye specialists and by general physicians at first, but now we are able to get figures on 5,392 blind who were examined by eye specialists alone. These are clients twenty-one years of age and over. We find among these 5,392 blind that the incidence of optic atrophy is 11.3 per cent. We also are able to get fairly accurate figures from the Missouri School for the Blind on 507 pupils who have been attending the school there between 1905 and 1925. We find that 15.1 per cent of them lost their sight from optic atrophy.

I would estimate that 75 per cent of all cases of optic atrophy are due to syphilis. Optic atrophy is the second largest cause of blindness among children, ophthalmia neonatorum, of course, being the first, and among adults it is the third largest, following trachoma first and cataract second. This, of course, is only for Missouri. I can speak only for conditions in my own state.

If we study the distribution of optic atrophy among adults of the 114 counties of Missouri and for St. Louis, we find that these cases are not confined to the centers of population. In fact, the largest percentage of optic atrophy was found in counties which have no large cities or towns. St. Louis and Kansas City—St. Louis with a population of 800,000, Kansas City with about 400,000—have only the average amount of optic atrophy for the state.

So we see that the prevention of optic atrophy is as much a rural problem as it is an urban one, although in St. Louis and Kansas City optic atrophy is the greatest single cause of blindness, running about 22.5 per cent.

Syphilis is also the cause of uveitis, choroiditis and chorioretinitis. Of the 5,392 adult blind in Missouri, 5.2 per cent lost their sight from uveitis and 3.4 per cent from choroiditis and chorioretinitis. Then among the 507 pupils of the Missouri School for the Blind, 6.7 per cent lost their sight from uveitis and 2.2 per cent from choroiditis and chorioretinitis. I estimated that in adults about 50 per cent of the cases of uveitis, choroiditis and chorioretinitis are due to syphilis and about 75 per cent of these conditions are due to syphilis. We found that among the children the cases of optic atrophy, chorioretinitis, choroiditis and uveitis came not so much from the large cities as from towns of 100 to 5,000.

I would estimate, speaking conservatively, that about 16 per cent of the blindness at the School for the Blind in Missouri has been due to syphilis, and of this amount about 70 per cent has been due to congenital syphilis. From a careful estimate of the amount of blindness due to syphilis among the 5,392 applicants to the pension for the blind I would say it is about 15 per cent. Dr. Hopkins, I think, mentioned that in Sweden some one had estimated this amount as 16 per cent, so that my figures correspond fairly closely. The amount here for the children was figured on an entirely separate basis from that for the adults.

DR. J. A. STUCKY (Lexington, Ky.): It is a very great pleasure and privilege to have heard this discussion this morning and I don't believe I dare try to summarize the impressions that have been made. It seems to me that one or two points ought to be emphasized. The medical profession has been guilty for a long time of holding back much of the truth and the time has come to turn on the light. The trained nurse, the public health nurse, are really doing more good from an educational standpoint

than the majority of the doctors and, on more than one occasion, I have had people ask me if what the nurse said was confirmed or approved by the medical profession. When I answered yes, they asked, "Well, why don't the medical profession tell us?"

I sincerely hope that this great organization, which is beginning to be felt by the entire world, will have some of this knowledge syndicated and printed in plain language, distributing these leaflets in the tactful, diplomatic way it has been using them so that every one may get the advantage of what is due them. There is danger in hiding our light under a bushel. The people of America must know the truth. It is only twenty years since I was called before a ministers' association in a crusade that I was making under the auspices of the Y. M. C. A. to wipe out the red-light district, and I was asked by eight or nine ministers not to use such plain language in my lectures. Now everybody is telling the truth. We did put out that "red-light district." We still have a few blind pigs, isolated spots here and there, and we are considering turning on the light of knowledge again, until the people are educated and aroused, and the law is enforced.

MR. EDWARD M. VAN CLEVE (New York Institute for the Education of the Blind, New York, N. Y.): I have only one word to suggest. I object to Dr. Snow's remark that "it just happened"; it didn't just happen, in my opinion. This effort to bring to the public information concerning the possibility of eradicating ophthalmia neonatorum in a pleasant way, in a way which would be accepted by the general public, I think was very largely due to the emphatic statement made by Dr. Mark Stevenson, whom the ophthalmologists know quite well, a brilliant young ophthalmologist of Akron, Ohio, who, I think, in the meetings of the Ophthalmological Society, brought to the attention of the physicians the fact that in his opinion a rather large percentage of ophthalmia neonatorum was not due to the prevalence of the gonococcus, but to other cocci, and he very strongly impressed that upon my mind in our conferences in Ohio.

From that there came to be the general impression throughout the country among the social workers in this movement. Miss Caroline Van Blarcom particularly had the matter called to her attention. We discussed it here on occasion. So we tried to make it quite plain that this Committee for the Prevention of Blindness did not purpose to put up an ugly statement where we could have a much more pleasant statement, that is, that blindness from ophthalmia neonatorum might occur without casting the reflection of sin on either parent.

CHAIRMAN ALGER: I think that is a very important point. If we could once convince the public that syphilis was in a very large percentage of cases not venereal, it would be discussed much more freely and treated much more freely.

MRS. FRANCIS LITTLE (Maryland Society for the Prevention of Blindness, Baltimore, Md.): I should like to ask a question. If children are born of a syphilitic father and reach the age of seven or nine years, how often ought they to be examined, or is there any danger?

CHAIRMAN ALGER: I wonder if Dr. Hoyt will answer that for us.

DR. HOYT: I think it is a good plan to keep children like that under observation about once a year. We have everything to gain and nothing

to lose. One of the points that you have to bear in mind is that there are two things that could happen in hereditary syphilis. The child may inherit the disease and develop symptoms of the disease; or there is another condition, known as a syphilitic dystrophia, in which the parent does not have syphilis but there are certain peculiar heredities or failures of development that he may exhibit. I could quote one case I had among my own patients where I made the diagnosis of syphilis in the father and made the diagnosis on a suspicion. It was a fact that one of the children was developing kleptomania; this little boy showed kleptomaniac tendencies, and I was wondering whether he had syphilitic dystrophia. On questioning the father we found the source. This boy did not have syphilis himself, I examined him repeatedly, but he did have that dystrophia. That, I think, is just as important to watch out for and guard against as the disease itself. Sometimes it is more important.

MR. GEORGE F. MEYER (Board of Education, Minneapolis, Minn.): I would like to ask a question. We have in our sight-saving classes, of course, quite a number of these children who have luetic backgrounds. I should like to ask the advice of the doctors here in connection with advising those pupils with reference to their future life. I have often thought of girls and boys going out and marrying, and so forth; they ought to know something about their condition. I have a very strong suspicion that most of them don't. They know that they are being treated, but that is all, and I have in one or two instances been asked and I have advised the people to consult their physicians, but as it has been referred to here, it is often difficult to get the most expert advice from some of the family doctors.

CHAIRMAN ALGER: I wonder if Dr. Snow would like to answer that question.

DR. SNOW: I don't know that there is any answer, except the point of education, education particularly of the general physician, on which we are constantly working, of course. It is slow, just as it is slow to get teachers to take up problems, because they are all so much overburdened with responsibilities already.

Dr. Park Lewis, I think, gave us the real answer, that we have to reiterate these things at least five times. I think it is perhaps true that the laymen can, by bringing into the picture the specialist, show that these problems are problems not of just any physician but that they are problems of the specialist plus the general physician, plus the public, and perhaps in these cases we can do something, I think, by educating the public to see the importance of the specialist as a consultant not only to selected groups of patients, but a consultant to the physicians as a whole. We have every indication that these great groups of professional people who are directly in touch with the public are just as eager as we are to get the right thing done and to get the right information, but they don't quite know how to go about it.

I think the suggestion of pamphlets, not written for the public but written for these professional groups, is excellent, and I agree with the speaker entirely that we ought to give young men and young women information not so much because we think they themselves have a personal problem, but because the diffusion of academic knowledge, so to speak, about these problems to everybody is bound in its turn to be transmitted on to those who do need it.

Perhaps the concrete illustration I can make which would interest you to look into further is a piece of work being done in Detroit by Dr. Dixon, with his clinic. He says he thinks there is justification in the city's maintaining a very large venereal disease clinic. They don't call it that. They call it Infectious Disease Clinic. One of the greatest returns to the city is not the treatment of individual cases, but the fact that they are being taught adequate treatment there, and they go out and meet other men on park benches or in working groups and tell them what good treatment means, what it means to get a specialist rather than a man who gives them a prescription and lets them go.

The same thing is maintained in the University of California Infirmary, where they have for twenty years maintained a very large advisory and treatment service combined, for the students. They feel that the great value of their work is not in the treating of the infection of a finger, for example, but in showing them how important early effective treatment is, and as those graduates of the University go out into their after-life in the community, they know the standards of effective treatment. We can apply the same sort of thing in this material if we do it with the same attention to the routine, and my hope is that the interested groups like this, working with the general rank and file of the medical profession, using the specialists as consultant and service agencies, will bring about gradually this diffusion of knowledge, which will answer this question; but I don't think there is any immediate answer.

MISS IDA RIDGEWAY (Department of Education, Boston, Mass.): I wonder what has been done or what may be done for our children in schools for the blind. I mean the children who have congenital syphilis, probably a negative Wassermann, and should be returned for periodic observation to their doctors or their clinics. Has any good way been worked out of getting those children while they are still students in these schools for the blind into the hands of the proper medical people? We have a little trouble with that and I am very anxious for advice.

CHAIRMAN ALGER: Perhaps Dr. Lewis can answer that.

DR. LEWIS: I am not sure that I can, Mr. Chairman. We are trying to work it out now. There has been a great deal of difficulty in that; we are trying to work through the health officer of the state to have a series of Wassermans made in all of our children universally. The parents object, and it will take a little time to get that carefully worked out. We hope to do it ultimately.

Part II

1. Relation of Public Health Nursing to the Prevention of Blindness

PARK LEWIS, M.D., *Chairman*

2. The Nurse in the Testing Vision of Children Demonstrations

B. FRANKLIN ROYER, M.D., *Chairman*

CONRAD BERENS, M.D., *Referee*

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING
AND
NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS

3. A Brief Survey of the British Myope Classes*

WINIFRED HATHAWAY

* Printed as a separate Report of the National Committee for the Prevention of Blindness and sent upon request.

Conservation of Vision in the Field of Public Health Nursing

JANE ALLEN, R.N.

Director, National Organization for Public Health Nursing, New York, N. Y.

The topic for these five-minute talks is "The Common Ground in the Conservation of Eyesight," and I am representing the National Organization for Public Health Nursing. The common ground between public health nurses and the Committee for the Prevention of Blindness is, I would say, found in the fact that public health nursing is primarily a job having to do with health education. We are, as public health nurses, interested in conserving health and preventing disease, and as health teachers, which is often the way we are designated, we are also family workers; that is, social case work is a large part of our responsibility as public health nurses. When we enter a home, and a great deal of our work in a community has to do with getting into the homes, we have what we call points of entry, some way in which we can capture the interest of a family so that we will be welcome visitors. When once we get into the homes, however, we think not in terms of an individual in that home, a specific errand that might have taken us there, a school child or a baby or a case of tuberculosis, but we think in terms of family welfare; and every factor in the environment, every factor in the family circle that has any bearing upon the welfare of the individual in that family, is of interest.

Thus, the conservation of eyesight is one of many interests that we are concerned with in the welfare of the families and the welfare of communities. We find in public health nursing certain fields, as we call them, of interest. We are interested in prenatal care, and from the standpoint of the conservation of eyesight there is a good field for preventive and educational work. In our visits to prenatal cases we are interested in having all of our patients examined and supervised in such a thorough way that we are reasonably certain that certain accidents which might occur at the time of birth will be prevented and obviated, and we feel a further responsibility for educating the people to the necessity for the right sort of care for the newborn infant's eyes.

When we are in the second field, designated as infants' welfare, there is a great deal of educational work that we are constantly doing with the young or inexperienced mothers in the matter of conserving the eyesight of the babies. We are just entering the pre-school field in public health work and, as we are beginning to gather together groups of pre-school

children, we are expecting to pay more and more attention to the education of the parents in the right care of the eyesight of these children.

Then, when we come to the next field, the field of school health work, we find, as you know, I am sure, that the public health nurse has here a large opportunity for educational and preventive work, correcting the environment in the school room, detecting the incipient defects of vision, and securing corrections for other physical defects which have a bearing upon vision. All of this is within the province of the school nurse and has a place in her work in the school program.

Then we find another field that the public health nurses enter, that of industrial health. Here there is a great deal to be done with the adults in the conservation of eyesight and in helping to ensure right working conditions.

Time does not permit me to go into the details of any of this, but all the way along the line, through every age group from the prenatal period on up to old age, because we are interested in all that has to do with the well-being of individuals, families and communities, we are definitely interested in the conservation of eyesight and the prevention of visual defects. Because the field is so big and we as health teachers are so few, we have to think a great deal in terms of group teaching. Hence you will find us organizing clinics or health centers, and bringing in the prenatal groups, the pre-school groups, and the school groups for group teaching. In industry also we depend a great deal upon group instruction.

So, then, in summary I would say that our common ground, with a committee such as the National Committee for the Prevention of Blindness, lies in the fact that we are in the preventive field of work, that we believe in health education as the very best prevention, and that the conservation of eyesight is one of many interests that we are continually keeping in mind.

Follow-up in the Conservation of Vision

JANET GEISTER, R.N.

Assistant Secretary, Associated Out-Patient Clinics, New York, N. Y.*

Miss Allen stressed how much the nurse had to do with the prevention of blindness. I feel that we want to stress, too, how much she has to do in the treatment of the cases already found with some unfavorable eye conditions, and especially in those conditions where the illness or the disease of the eye might lead to blindness.

The nurse can do a great deal in this in follow-up. We realize, of course, that in following up these patients that have been diagnosed or that have been to an eye clinic, that follow-up must begin at the doctor's desk. Dr. Conrad Berens has outlined that well in a recent article.† He outlined in it the procedure for different types of cases that should be followed up from the clinic, not only for the guidance of the doctor but the social worker. We find that the doctor does not always begin the follow-up where it should be begun—by explaining to the patient the "how" and the "why" and the "when," telling the patient what is the matter with him and when he should come back. The nurse can do a great deal to overcome this lack—to make follow-up of the patient effective. In the first place, she can overcome it by good recording (we have found in all the studies that we made that the records were very inadequate); in the second place, by making the patient understand before he gets away, and third, in following the delinquents.

The study that was made in 1922 by Dr. Gertrude Sturges and Dr. Berens indicated that out of 193 cases presenting selected eye conditions, 103 patients attended the clinic only once, and that 22 attended but twice. The same point is brought out still more forcibly in the instance of certain especially serious diseases. Eighty-three per cent of the cases of purulent conjunctivitis, 80 per cent of the cases of syphilitic retinitis, 75 per cent of tubercular keratitis, came only once to the clinic. The ophthalmological section of the Associated Out-Patient Clinics made the recommendation, in 1922, that there should be certain types of cases followed from the clinic. It also recommended that the physician should be responsible for seeing that follow-up is included in the clinic work and that the social service department should follow-up these cases.

* Since the delivery of this paper, Miss Geister has become Director at Headquarters of the American Nurses' Association, New York, N. Y.

† "Social Service and Follow-up in Ophthalmology," by Conrad Berens, M.D. Read before the American Academy of Ophthalmology and Oto-Laryngology, Colorado Springs, Colorado, September, 1926.

In 1926 we made another study very much of the same nature, especially to find how many clinics were using follow-up work. We found that in very few of the clinics was there any follow-up. This is the summary of the report: A few clinic chiefs call upon the social service worker to supplement the medical treatment with social treatment, but the majority of clinics do not as yet utilize social service to any extent. A definite follow-up policy is needed in nearly every clinic. Few clinics keep records showing the outcome of cases, or indicating, for instance, the proportion of patients for whom glasses are prescribed but who do not obtain them, or the proportion of patients with eye diseases who fail to carry through treatment.

In the instances of serious or infectious eye diseases, we felt that it was serious enough to warrant our making another case study similar to the one made in 1922. Thus Miss Mary Taylor, of our staff, went out and studied a thousand eye cases. She is just in the process of writing the report, but we used some of the material in the first 500 cases of a recent report written by Dr. Berens, too, and it indicates that very little change has been made since 1922. In other words, there is no more follow-up, not only to cut down the number of one-visit cases, but also to follow-up the cases that present conditions that might lead to blindness. We found that a study of 500 cases similar to the one made in 1922 shows that much the same condition prevails, and one of the outstanding points was that 50 per cent of the cases with these serious eye conditions which bring on permanent blindness attended the clinic only once.

There are a great many more interesting figures in this that I won't attempt to read to-day. These facts will all be available, we hope, very soon. We will be glad to send out reprints to any one who wants them. We do want to emphasize the need for instituting more follow-up in the clinics and in the institutions that are doing eye work so that the work of the doctor can be conserved and especially that the eyesight of the patient be saved. The officers of one of the institutions here, following the 1922 report, were so impressed with the need for follow-up that they put in a full-time social worker. Their record in getting patients back for glasses, in cutting down the one-visit cases, is so unusual, is so far above the record of other institutions which do not have that system, that we can readily see how much could be accomplished if follow-up system were established, and if there was a follow-up for all these eye cases.

Co-operation in the Prevention of Blindness

LEWIS H. CARRIS

Managing Director, National Committee for the Prevention of Blindness,
New York, N. Y.

In its attempts to realize its aims the National Committee for the Prevention of Blindness recognizes the increasingly great help which nurses give in preventing blindness. Work for the prevention of blindness differs from many kinds of social activities in that it is not done largely by local groups devoting themselves exclusively to the prevention of blindness; that is to say, we do not have throughout the country a large number of state and local organizations devoted exclusively to the prevention of blindness, and even where those do exist they must do their work largely through other organized forces of society. Of course, the nurses in this respect have a very important place in the field of the prevention of blindness.

The National Committee for the Prevention of Blindness constantly strives to place its own work in the proper perspective of the picture made by general health activities. Eyesight is not a physical defect that can be separated from other physical conditions and be given separate attention exclusively. If we are to conserve eyesight, our program must be a part of a general health program. The great work of public nursing is concerned with the whole field of public health education and one of the phases of nursing work is that of conserving sight. I can see that there may be some danger of emphasizing the eye as a separate activity until it has too great a place in the perspective, and I can see, on the other hand, that there might be some danger that nurses in general may minimize the importance of eyesight in a general health program.

So then this is a get-together meeting where we have the members of the staff of the National Committee for the Prevention of Blindness and the members of the staff of the National Organization for Public Health Nursing to discuss informally the ways in which we can be mutually helpful. The National Committee for the Prevention of Blindness has from the beginning concerned itself with promoting legislation and practices with which nurses are, of course, intimately concerned. We started in with the prevention of blindness from babies' sore eyes. That work is not at all complete yet. Ophthalmia neonatorum has been reduced by half. But we are satisfied that it should be reduced to almost zero and that our activities cannot stop until the time comes when no baby in our nation shall be blinded by babies' sore eyes.

We just now have been engaged in a further study of what more can be done to educate the public as to how ophthalmia neonatorum can be still more reduced. This is through a questionnaire which has been sent out to the state, provincial and territorial health officers, to the professors of obstetrics of the various schools, and to all maternity hospitals. The results of this questionnaire will be available for nurses as well as others.

We are interested in industrial accidents, and there nurses play an important part. We have been interested from the beginning in the school children and the physical conditions surrounding the school children. Nurses are playing more and more an important part in the educational program. We have been interested in the examination of the eyes of school children to detect early visual defects and in the establishment of sight-saving classes.

So we hope there may be formed, as a result of this conference, a joint committee on which shall be representatives of both the National Committee for the Prevention of Blindness and the National Organization for Public Health Nursing, which may formulate a program which will be mutually helpful and which may advance the work of preventing blindness and the progress of public health nursing.

The Importance of the Public Health Nurse in the Prevention of Blindness

CONRAD BERENS, M.D.

Surgeon, New York Eye and Ear Infirmary, New York, N. Y.

The original meaning of the word nurse as taken from its Latin derivation has long since failed to be descriptive of the many functions of the present-day nurse and particularly the public health nurse. For she not only nourishes those with whom she comes in contact, but teaches them how to live healthy, useful lives and, of even greater importance, instructs them in the principles of the prevention of disease.

How fitting it is that the National Organization for Public Health Nursing should be in conference with an organization the aim of which is the prevention of eye diseases, for the public health nurse can play a major part in this important work even before the child is born, and carry the work on through the entire life of some of the individuals with whom she comes in contact.

She can also be of inestimable value in helping in the routine examination in our clinics and in the follow-up of patients. Without follow-up, or possibly the better term is "case control," many patients would become needlessly blind and the hospital records would be of little value for research, teaching or, more important still, the intelligent treatment of the patient.

The periods of life in which her instruction and influence play an important part in the prevention of eye diseases seem to be naturally divided into the prenatal, pre-school, school, adult industrial and other types of adult life.

The prenatal influence may be exerted upon those who contemplate marriage by urging them to be sure that they are free from any infection which might affect the eyes of the offspring. They should be warned that if there is a history of lues or Neisserian infection, these infections should be pronounced free from danger to the offspring before the marriage takes place, for interstitial keratitis as the result of the former, and ophthalmia neonatorum as the result of the latter may mean the loss of useful vision and possibly an eye, if proper precautions are not taken.

Patients with hereditary defects, particularly hereditary cataracts and high myopia, should be warned of the danger of transmitting these diseases to their offspring, and it is possibly advisable, as Dr. Lucien Howe has suggested, that these people should not be permitted by law

to have children unless they give a bond, so that these unfortunate children will not become public charges.

The pregnant mother should be instructed in hygiene of the birth canal and should be told of the danger to the child's eyes if she over-indulges in alcohol, loses her health or has an acute infection, for it is possible that some of the unexplained blindness may be due to some of the factors just mentioned. At the time of birth, as soon as the child's head appears, 1 per cent silver nitrate solution should be instilled in each eye after the eyelids have been wiped carefully with sterile cotton moistened in 2 per cent boric acid solution. By this simple procedure much of the blindness from ophthalmia neonatorum has been prevented in this and other countries by those aware of the value of preventive medicine. The care of the eyes should continue after birth, as the eyes may become infected from towels or other contaminated articles. Many birth injuries affecting the eyes are due to the improper application of forceps, but if they are properly applied, there is little risk, and they undoubtedly prevent the danger of long-continued pressure on the head.

The pre-school age is an important time for the child's eyes, for it is at this period that he develops or fails to develop the important function of binocular simultaneous vision. The best time to treat a patient who is developing strabismus is when the first sign of occasional turning of an eye is noted, for if lenses are required they may be worn as early as the first year or even younger. Squint developing as early as this may be accompanied by some eye disease as an underlying factor which is impairing vision and which naturally should be discovered as early as possible.

The education of the public as well as of some doctors may mean the saving of useful vision for many of these children, or at least the development of the important fusion faculty which makes it possible to learn to judge depth and distance quickly and accurately. We frequently see children of the pre-school age suffering from phlyctenular keratitis, popularly known as recurring ulcers. This condition has been considered as a tuberculous affection of the eyes, by some as an effect of malnutrition, but undoubtedly many of these cases are aggravated by chronic infection of the nose and throat. This condition destroys much useful vision and can be prevented by care of the nose and throat and by using all measures which tend to prevent tuberculosis, particularly sunlight, cod-liver oil and proper nourishment. It is also important to correct refractive errors early, for even though a squint does not develop, the retina or seeing coat of the eye may not develop properly if the picture brought to a focus upon it is not clear.

It is in the pre-school age that we see many unfortunate accidents due to sharp instruments which find their way into unskilled hands. Needless to say, all pointed objects should, if possible, be kept away from these children. By examining the eyes of children, as has been done recently

by the pre-school clinics under the direction of the National Committee for the Prevention of Blindness, useful vision will be saved for adult life.

There is no doubt that by the periodic examination of the eyes of school children, even though not carried out by an ophthalmologist, but by an intelligent, trained person, many conditions may be detected which might later result in blindness, and it is hoped that your splendid organization will continue to co-operate in this important work. If refractive errors or muscular defects are found, the patients should be referred to the family physician, who will then consult with the ophthalmologist. We are realizing more and more forcibly the effect of disorders of the general system on the eye, and, by elimination of foci of infection and further, by the correction of physical defects, we are finding it less and less necessary to recommend the wearing of glasses constantly in cases of low errors of refraction.

The effect of general health on muscular anomalies of the eyes is also important and these conditions should always be treated in consultation with the general physician or pediatrician. The nurse may make valuable suggestions in regard to illumination and she should urge that blackboards, desks and charts be adequately illuminated by light of the proper quality, and that glare should be avoided. The writing hand should not cast a shadow on the paper and the light should not be reflected from the student's work directly into his eyes nor should light sources be left uncovered so that the direct rays can strike the eyes. If children have such poor vision that they must strain their eyes to keep up with their studies, the possibility of organizing sight-saving classes, or referring children to these classes, should always be kept in mind.

In adult life there are so many points to cover that we can select only one or two for discussion. In industrial occupations much blindness is still met with, due largely to the carelessness of the employees who frequently refuse to use the protective devices given them. It is far better to teach these men the importance of protecting the eyes from foreign particles, injurious rays, dusts and fumes, than to have them learn by costly experience. Some accidents occur and vision is lost because many concerns do not examine the employees' eyes before engaging them; but fortunately for the cause of the prevention of blindness, an increasing number of the industrial leaders are beginning to realize the importance and value of such examinations.

By properly correcting muscular anomalies and errors of refraction, treating those who show signs or have symptoms of eye disease before they are employed, and by providing proper illumination, protective devices and expert medical attention for those who are employed, much blindness can be prevented. Those in industrial occupations, as well as all who value their health, should have a careful examination of their eyes once a year, for it is frequently possible to detect the earliest signs of disease of the kidneys, blood-vessels, brain and blood, as well as

the earliest indications of poisoning from foci of infection, such as tonsils, teeth and nasal sinuses, by a thorough routine examination of the eyes.

In closing, we of the National Committee for the Prevention of Blindness hope that the National Organization for Public Health Nursing will take our small problem, which means so much to the happiness of the individual and which is a big factor in the efficiency of the nation, to its heart, for if it does, we are sure much blindness will be prevented in this and other countries.

Discussion

DR. COLMAN W. CUTLER (New York, N. Y.): The vital importance in the early recognition of defects of the eye rests so largely with the social service worker and the nurse that I am always glad of an opportunity to emphasize that point, and to keep constantly before the eyes of those who are increasingly volunteering and making themselves so valuable the importance of the interest in recognizing a beginning keratitis, the dangers of a conjunctivitis and the fleeting squint. But there are those ladies volunteering in the clinics, without the adequate training of the trained nurse, for that purpose who cannot know the vital importance of this early recognition of all sorts of defects, of the slightest fleeting deviation of the eye, of the beginning of a slight flush of the eye which the mother may think is a pink eye and which may leave a spot on the cornea for life.

There are so many things you can do to help us and that we can perhaps aid you in. As I think of my work in the clinics years ago, before the follow-up system was initiated or at least established, I wonder how we had the courage, the nerve, to go on with medical work in those days. We would perhaps see a patient one day and then not see him again until something disastrous had happened or he had gotten well. How did we know what was happening in the mean time?

MISS HUDSON (Department of Nursing Education, Teachers College, Columbia University, New York, N. Y.): Two things have interested me especially in this discussion. In the first place, Miss Allen has pointed out, as we are all aware, the splendid opportunity the public health nurse has in the field. Miss Geister pointed out the follow-up work in our occupational departments, and it seems to me that if we could concentrate our efforts upon trying to get a better experience for those students who are very largely in touch with those occupational departments the nurses would come into the public health fields prepared to carry out the work, and the work in the occupational departments themselves would be much better done.

MISS MARION A. CAMPBELL (Illinois Society for the Prevention of Blindness, Chicago, Illinois): This discussion has raised a very practical question in my mind. I remember some years ago discussing with a group of nurses (I think it was at the convention in St. Louis) just how far it would be possible for those of us to go who are trying to organize follow-up work for, let us say, babies with sore eyes and their mothers which, of course, essentially follows, for a child in the family who has interstitial keratitis and perhaps for the high school girl who has indications of something which may mean the same. We tried to determine whether it

would be possible at that time for the public health nurse to inaugurate in her follow-up all of these phases of health, and it was laid upon the shelf. We all recognized the reason for it. It was not considered by the nurses at that time in the best interest of their developing work to try to meet the families with this, at that time, taboo question, because every phase that was referred to them had to do with disease in the family.

I don't believe that the public now recognizes, as it did then, that a case of babies' sore eyes is a blot on the family's escutcheon. We all know that it need not be. So it seems to me that the largest reason why that question was laid on the shelf at that time has disappeared. I believe that the time has come when the visiting nurses and all the other public health nurses can take with them this detail: I have in mind a group of thirty school children who have been assigned to sight-saving classes because they have interstitial keratitis—not that they can do much work in the sight-saving classes but they can at least be under the observation of the nurse and of the teacher of a smaller group and their regular treatment can be ascertained.

Who to-day is following up the cases of gonorrheal ophthalmia? Is the visiting nurse going back to the home when the mother gets back from the hospital and sitting down and talking with the mother about the situation? It seems to me that the pioneering period is past and that the visiting nurses can now, as they could not at that time, assume this additional health follow-up. I believe that the cause for the prevention of blindness will be greatly advanced if that could happen, because we do not believe in establishing special nurses; we believe in one nurse in the home, and if that one nurse has the confidence of the family she can very much better discuss these vital things with the mother.

I should like very much to take back to the field which I represent the decision that this can be anticipated on the part of the public health nurses, because I believe that it must come and I hope that it has come.

CHAIRMAN LEWIS: I want to suggest just one little word of warning in regard to this before we close, and that is the stress we are putting upon the possible hereditary character of disease needs to be balanced by a recognition of the fact that many of these conditions can be overcome and that the disasters which we fear need not always occur. In other words, the younger workers are apt to develop syphilophobia; there is also a fear of inherited conditions for which there may be no basis. I know in one instance in which there was a tubercular ancestry, there was a great deal of unwarranted apprehension in regard to the progeny of these people in whom there was tubercular history. That needs to be borne in mind—not to stress too far the other way. Bear in mind the fact that very many of these conditions, by proper development, may be so overcome that marriage is not only proper but right.

Testing the Visual Acuity of the School Child— A Demonstration

BEATRICE SHORT, R.N.

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New York, N. Y.

Editor's Note.—In the presentation of this demonstration the testing was carried on with actual public school children, who were brought through the co-operation of the Board of Education. Dr. Conrad Berens acted as referee, and questions were permitted from the floor.

The first thing in making a vision test is to choose your test card, and so I have asked Dr. Royer to bring a variety of cards this afternoon that we might look at them together and choose one which seems to us to be right. I reject this card for two reasons: The type is not good; it is not clear. I reject it because it has only a twenty-foot vision line, and in some schools it is extremely difficult to make a test at twenty feet because of lack of space where we have sufficient light on the card. So it is necessary for the making of accurate vision tests that we have a card which has a ten-foot line. This one is better, but here on the left side it has the distance in meters. I did not speak of that on the other card because the distance was in feet, which is the way I like to have it for nurses making a test. On the left side it is given in meters and on the right side in feet, but not in even feet. The card is dirty, too. I wouldn't want to make a vision test with a dirty card.

I like this chart. It has the ten-foot line. It has good clear type on a linen background. It is not shiny, and it does not produce a glare. The only thing about it is that I think it should be placed on a solid background because it might be just a little transparent if there was any opportunity for light to come from behind.

After choosing the chart, the next step is to hang the chart in a position where it will have sufficient light without glare on the letters. The amount of light which the National Committee has said should be the minimum standard is the equivalent of ten foot-candles. As measured by the foot-candle meter, there are 16 foot-candles of light on the chart.

Inaccuracy in measuring distance is a common fault. Another important point is to have the chart hung so that the line from the letters to the children's eyes will be practically parallel with the floor; if anything, the letters should be slightly below the child's eyes.

Each eye should be tested separately, the other eye being kept open, but covered. We cover it with a clean card.

This little girl is wearing glasses. (Testing the eyes of a school child, Mildred.) When a child is wearing glasses, it has been my practice, and I know that the Committee upholds it, to examine the child with and without the glasses and, of course, it is necessary to ask the pupil how long she had been wearing glasses and how long she had been wearing this particular pair of glasses. This little girl has worn them three and a half years, and the pair of glasses she has on now she got only a month ago, that is, the lenses were changed a month ago.

You will notice that there was a mistake on three letters in this line, but I will leave it to Dr. Berens to speak about the significance of that in relation to the time that the glasses were changed. I should ask whether she had her eyes re-examined a month ago or whether she got new glasses a month ago. It is too much of a supposition to say that because she got her lenses changed her eyes had been re-examined. She might have broken the glasses or lost them and got a new pair of glasses a month ago. What we really want to know is how long it has been since she had her eyes re-examined.

The question as to symptoms should come after the eyes are tested. I should ask the child whether she had headaches, and the nurse should ascertain whether the child is suffering from headaches, from watering of the eyes or from blurring of the vision. In connection with this there are several points which I expect to take up at the end of the tests when I will speak of them in relation to the follow-up work subsequent to the vision test.

The point has been brought up as to whether we always examine first with the glasses and afterwards without the glasses. I would like to ask Dr. Berens to say what would be the value of the one over the other.

DR. BERENS (Referee): Of course, in such a careful examination, using the little cover test there on the last line, it is not so important to examine first without the glasses and then with. However, with the very intelligent child, if you examine with the glasses (they really correct vision) you would, of course, have the possibility of the child's memorizing the letters before you had tested them again. Regarding the necessity, in examining a child with glasses for the first time, to ask the child to read the whole chart, it is a question of fatigue and strain that is rather important. We should consider that, and not strain the child too much, especially the attention of the child. We know how hard it is to keep the attention of the children. Therefore, it is a practical point in that regard and in the saving of time. There are some charts on the market to-day which give only two or three letters, so that in the upper lines you have two and down at the bottom you have only two as well. In the better charts, however, the 20/20, the 20/10 and 20/15 lines contain a whole line of letters, where you are very anxious to know about the child's failure. If the child fails above 20/30 and 20/40, of course, you

immediately have the question of why the child has failed, and you refer that child for a further examination. On the lower lines, however, you want to be rather sure of exactly what the child can see. So that is an important point and one which is practical.

MISS SHORT: When I am examining children who are wearing glasses and get to the point where they are having to strain their eyes, I know that they cannot read the line as they should and I stop asking them to. It may be asked: "Why, as a school nurse, should I be concerned with testing this child's vision further after I have tested it with the lens on and am now testing with the lens off? What public health reason have I for it?" I only have to cite one instance where in my early experience I found the child wearing five-and-ten-cent store glasses; she didn't need them at all. That particular youngster for some reason or other was pleased to wear glasses. She had perfect vision without the glasses and I was not sufficiently expert to be able to tell by just looking at the glasses that they were five-and-ten-cent store glasses. I do not know how the referee would answer that question.

DR. BERENS: This brings up a very important question and that is whether the child's eye is perfectly all right just because the child is able to read the so-called normal line, because, as we all know, 20/20 is just an arbitrary standard of what we are supposed to be able to see. It exposes the vision on the minute angle which we know is not the smallest angle at which the normal eye could see. A very important point, however, in testing children both with and without lenses is this: Very frequently, even though the patient has been rather carefully refracted, the lens may turn in the frame and, in the case of astigmatic correction, the child may be wearing a glass which was perfectly correct when given but which may be producing symptoms at the present time.

Furthermore, it is a rather important thing to have this as a check against the type of glass she is wearing. Some oculists, of course, give very strong glass in cases of muscular anomaly, in cases where the eye is turning in, cases of squint, for instance. This is a good thing in some cases and it is a rather good thing to have this particular check on the glasses by the school. Where it is found that the glasses do not give as good vision as they obtain without the glasses, it is sometimes well to be sure that this was intentional on the part of the physician.

The public health aspects of investigating further whether the pupil has a defective vision are absolutely important. One point here has not been brought out which probably will be brought up, and that is the importance of the pin-hole test for seeing where the vision can be improved. The pin-hole cuts out the rays which ordinarily do not function, due to their refractive error. In other words, they just permit the central parallel rays to pass, and it is a very rapid way of determining whether

the vision can be improved. If the vision can be improved at 20/20 line through this pin-hole, of course, there is no hurry about having the patient see the physician. If it cannot be improved at the 20/20 line, this child should be referred as soon as possible to the physician to determine the cause, because it may be due to an internal condition, a scratch on the surface of the eye, or a blood condition.

One point about the pin-hole test is that it is not always absolutely accurate, for this reason: it also takes away from the lighting of your chart. If you had ten foot-candles or over on your chart, it is a fairly accurate test and one which may be relied upon in school testing. The pin-hole test presumably shows there is some error of refraction that is apparently correctable.

MISS SHORT: Just to bring my part of the discussion to a close, I want to speak very briefly of the follow-up work of the school nurse. Regarding the lines for the evaluation or testing of astigmatism, in writing up the vision test in our own public health manual, which the National Organization for Public Health Nursing prepared last year, we said nothing about those lines. In writing up that vision test I checked it up very carefully with the instructions which this Committee had prepared. The wording is somewhat different. I prepared it especially for school nurses who had not taken any course in public health nursing. My own experience with nurses has been that the simpler the vision test, the more simply you state the method of making it, the more accurate will be the testing. I am only sorry that at that time we did not have the very excellent little table which Dr. Royer gave us the opportunity of printing in the September, 1926, issue of *The Public Health Nurse*, giving the percentage of visual acuity based on Snellen's notation. So often 20/30 is written as a fraction, giving a wrong impression of the percentage of vision retained.

In following up the vision tests I feel that as school nurses we should refer every pupil who does not have a 20/20 vision or who is showing definite visual difficulty, as indicated by habitual watering of eyes, blurring of letters, or habitual headaches. I appreciate that most physicians and specialists feel we need not refer cases unless they have less than a 20/30 vision, but I believe that as a national organization we must suggest to the nurses over the country that they follow this rule unless another rule has been made by the physicians in their community, preferably the oculist, and that they will not take upon themselves the responsibility of not referring children who have less than a 20/20.

I do think that here we should be particularly careful in doing our follow-up work, to talk over the case with the teacher, especially where there is some indication of difficulty and yet the reading of the test chart is correct. I think that we should talk to the teacher and find out from her what the child's difficulty has been. It may be that she has not

noticed particularly, but if we can ask her to notice that child and tell us later before we make the home call, definitely to notice the child, then we will have a more accurate idea of what the difficulty is and whether it is sufficient to warrant advising the parents to take the child to a specialist.

Discussion

MISS MARY A. BROWNELL (National Organization for Public Health Nursing, New York, N. Y.): May I ask a question? Dr. Berens spoke of a possible trouble with astigmatism in connection with the little girl having a great deal of vision trouble. Occasionally we find these charts with a little circular arrangement for a superficial test of astigmatism. I would like to know what Dr. Berens thinks about the public health nurses' trying that, if there is any way in which we should use that or can check up on astigmatism in any way, either that or muscular weakness of the eye.

DR. BERENS: The first question, the one about astigmatism, is one which it would seem to me would hardly concern itself with the public health nurse only in so far as it affects vision. If, as we have demonstrated here, the vision may be brought up to 20/20, or better with the pin-hole test, that gives us a very important clue as to the type of case which we should refer immediately to the physician. As I said previously, and I think it is worth while emphasizing, the patients who can read the normal line through the pin-hole may be deferred in their reference to the physician, but those who cannot be improved to the normal line should be sent immediately, for it may be just a cold in the head which may result in blindness if it is not immediately relieved.

The second question is the protection of the muscular anomalies, which is extremely important, one which we have been very much interested in, on which Dr. Royer is now trying to work out some tests. We have had several interesting sessions. In my opinion, it is not quite as important as vision, but it is an extremely important question.

DR. CUTLER (New York, N. Y.): I would like to raise just one small point. Dr. Berens has said that if the test is approximately normal with the pin-hole test the reference to the physician can be deferred. I should think that that might be almost leaving a little too much latitude. If it is a beginning myopia, for instance, you might still get approximately more normal vision, and we know that any delay will be taken quite liberally in the family, or it might be overlooked, and it is a great deal better to start right in such a case as that, even if the vision is approximately normal.

Another point that was raised was whether it was desirable to go on with these tests after the vision was obviously defective. It seems to me it is, because you have to have a record. You keep your card index always, and next year you will want to know whether she became better or worse.

DR. BERENS: It is quite right for Dr. Cutler to bring up this question. I think I was misunderstood in what I meant by this. I meant that if there were a great many children to be referred, the ones who could be deferred slightly, possibly in the examination by the ophthalmologist,

would be the ones in whom you were able to bring the vision to the normal with the pin-hole test, not that they should be delayed really, but if the question of preference came up, that you could delay these over the other.

MISS JANE ALLEN (National Organization for Public Health Nursing, New York, N. Y.): Are we to understand that school nurses should not attempt to use those astigmatism tests that are on so many of these eye charts? I have known some school nurses to attempt it and others not to do anything about it even when they suspected astigmatism. Did I understand we should never attempt that as school nurses?

DR. BERENS: In that, I have again been misunderstood. It is a very fair question. We think it is a good thing to use an astigmatic chart because sometimes the vision (if they have a high degree of astigmatism) will appear to be normal when you urge the child to read and are quite persistent to get the child to read. However, with an astigmatism chart you might get an early astigmatism.

Conservation of Vision in the School

HAROLD H. MITCHELL, M.D.

American Child Health Association, New York, N. Y.

I would first mention one point in regard to children wearing glasses. It is too much to expect children to continue to wear glasses if an interested adult does not take a personal responsibility to see that the child wears his glasses daily. The child may claim that the doctor said to wear his glasses only to read with when he should wear them all the time. The ophthalmologist may give instructions that the child should return for re-examination at a specific time. The teacher or the nurse should see that this attention is given the child.

Glasses may be obtained without a thorough eye examination. It often happens that patients have never had drops in their eyes, as they have been examined by an optometrist. Children who are in sight-saving classes particularly need to be checked up as to the advice given by the ophthalmologist, not only as to the time of the examination but as to the special attention in the school, special supervision, and advice to parents, because it so often happens that parents do not fully comprehend this instruction unless the nurse carries the message into the home. Therefore we must not consider our job done when we obtain the glasses for the child.

In regard to the administration of eye testing, we must consider that it is a tremendous problem to see that all the eyes in a school population of 20,000 to 50,000 or more children in a city have been examined satisfactorily. This work takes the time of the teacher, or the nurse, and the children from the classroom, so that labor-saving devices and speed are important considerations. As we may expect about as many as 70 per cent of the children to read the 20/20 line, is it important to spend so much time on the larger-sized type until we discover that the child cannot read the 20/20 line?

That child to whom we should give most attention is the one with defective vision and we should now face the question of the history. We all know that it is unsatisfactory to ask the child about symptoms at the time he gets his examination. If we broadcast a request to all the teachers in the school system to watch for certain signs or symptoms, we all too frequently get an unsatisfactory response except where the most careful educational supervision is given to the teachers. It seems to me that we should get better results if we would point out to the teacher the selected cases that have 20/30 vision or other considerations about which the

examiner is in doubt, so that he may obtain a definite history. Of course, we should like to go into the home of every one of these children and obtain the history from the parent. We should also like to have a history of all children with normal vision because we are impressed with the emphasis given to the history by the ophthalmologist, but if we give a teacher with 40 pupils a list of six or eight children whom she should observe over a definite period of time and from whom she can obtain the answers to definite questions for the physician, we can feel assured that we are approaching the teacher in the proper psychological way and we shall have, therefore, very much more careful observations, and the essentials of a history will be assured. With such facts as these observations of the teacher and the result of the visual acuity test, the nurse can approach the parent in the home armed with definite information that will be much more convincing than it would be merely to say that the child has defective vision. Every nurse is familiar with the response of the parents who say their child is all right and they do not want him to wear glasses.

It often happens that a child is advanced from one grade to another and his new teacher does not know that he should wear glasses. A very good scheme I have seen used to safeguard against this neglect on the part of the teacher is to have a star or a rubber stamp placed at the top of the usual school report card to attract the attention of the teacher. This indicates to the teacher that the child wears glasses and it becomes a responsibility of each teacher to see that all of these children with cards thus marked must continue to wear their glasses. The medical records should tell the remainder of the story as to the advice the ophthalmologist has given for special safeguards for the child.

If I may make one other point in regard to the education of people in industry to wear goggles. It seems to me that this is the job for the teacher and the nurse in the continuation schools. A large proportion of our cities now have continuation schools for children who have left the regular public schools. Many of these children are in industry. The time and place to educate these industrial workers to wear goggles in order to avoid eye injury is in the continuation school. I think it is a very important function for the nurse to give teachers in these schools the facts they should know with regard to the dangers of eye injury in order that the young adolescent may be thoroughly impressed with the value of goggles as a means of protecting himself.

Determining the Sight of the Pre-School Child—A Demonstration

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Editor's Note.—In the presentation of this demonstration, the testing was carried on with kindergarten children, who were brought through the co-operation of the Brooklyn Tuberculosis and Health Association and the Brooklyn Free Kindergarten Association, who are participating with the National Committee for the Prevention of Blindness in conducting a study of the testing of the eyes of the pre-school child.

In the work with pre-school children we are using the standards which have just been demonstrated to you by Miss Short as the correct standards for measuring the vision of school children—an accurately measured twenty-foot distance, proper lighting and a properly hung chart—that is, the chart is hung on the level of the child's eyes.

Since this group of children range in age from three to five and one-half years and have no knowledge of the alphabet or figures, we have used the illiterate E Chart. This was selected, by a process of elimination, as the most simple and most accurate, since we are not hampered by failure to understand what the child says. Many of these youngsters speak very little English, and those speaking English do not always make themselves easily understood by a stranger.

Our first problem has been to establish a contact with the child. This is accomplished by various methods. We have always had placed before us the child's name, age and family history. Such information is a most valuable asset in establishing an acquaintance with the child.

With these preliminaries done we begin to talk about our new game and by use of the cut out E, or E card, we teach the child to point in the direction the legs of this funny little animal point—sometimes they go up (arms up), sometimes they go down (arms down), sometimes over (arms out straight), sometimes across (arms across body).

When the child is thoroughly acquainted with these directions, we cover the upper part of the chart with cardboard. This is done that there may be no question as to what figure the child is demonstrating to us. If the large letters were visible, the chances are that the child would see the letter which is easiest to see—namely, the largest one. The use of the cut out E by the child to designate the position of the E on the chart was eliminated after a thorough trial as requiring too many activities and being too complicated for small children. Giving the position by indicating with the hands in a spirit of play we find to be more simple and less disconcerting.

From the twenty-foot distance we use both eyes until accustomed to

playing the game. For the purpose of covering the eye we are using cotton, as is done by Dr. Skeel at Hartley House.* You will observe that we are using what we call little boxes to put the little animals in—the game is much more thrilling when we get the little animals in the little boxes. The boxes are, of course, holes in cardboard—the purpose being to have but one letter visible at a time. We have found it most important to have the cardboard sufficiently large to cover the chart and to have the hole sufficiently large that the figure stands out clearly. For the 50- and 40-foot line the hole should be one and one-half inches square—for the 30- and 20-foot line, one inch square.

Since it is a bit tiresome for a three or four year old child to have one eye covered for any length of time—and again since these children have had no previous experience in concentration, we find it advisable to have the child go to the chart and read a line with both eyes—skipping back and forth between the twenty-foot line and the chart. This accomplishes two things: rests the child and assures us that he knows the directions we are asking him to demonstrate. At the first sign of weariness or lack of interest we send the child back to his teacher, first obtaining an assurance that he will play with us later.

In some instances we have a child who knows the game show a younger child who understands no English how to play it. This method has been very successful.

Children five years of age and over can usually be completed at the first party. Those over four require two or three parties, while those under four must needs play more frequently as there are many difficulties to overcome. Not always has the child of this age yet learned to reverse the picture on its retina, his powers of concentration are less developed and many diversions occur at a twenty-foot distance.

These tests for visual acuity have not been accomplished without difficulties; but given patience, ingenuity and time, it would seem that the vision of practically every child over three years of age can be accurately measured.

The children who have come to show you how to play the game are:

Thor, a five year old Swede, seven months in U. S. A., one month at Brooklyn Day Nursery, understands no English.

Linda, a five year old Syrian.

Abraham, a three year old Syrian.

Irene, a three and a half year old Irish American.

Victor, a four and a half year old Syrian.

In addition to the Snellen's test we also make a crude inspection of the eye, noting the condition of the lids and lashes, the conjunctiva, the cornea, the iris and pupils, the light reaction, ocular movements and any suggestion of squint.

* We have later developed a "peek method" by covering the eyes with a 3" x 5" buff card, peeking first with both eyes then with one. This is most satisfactory.

Practical Utility of the Visual Acuity Tests

COLMAN W. CUTLER, M.D.
New York, N. Y.

I have been so charmed, so fascinated, by the demonstrations of these last speakers, and in fact all who have spoken, especially on the pre-school work, that I am going to discard very largely what I had in mind to say. In fact, there is very little left to say, because I think the discussions by the previous speakers brought out most of the moot points.

With regard to the "E" test, I had in mind to question Mrs. Royer about the animals, and also about a little test consisting of three figures, a bear, a girl and a boy and a racket, which is common enough and attracts their attention. One has to gain the children's confidence. One has to play with them, I think, even before approaching this stage. So I have taken the animal tests and I colored the figures in various ways and I cut out other figures of approximately the same size and I tried to study the child's reactions and in some instances I have reached conclusions which lead up to this far more accurate and definite test which I am delighted to have seen so lucidly explained to-day.

The first problem of vision has been well stated, the testing of vision, and many children could be helped if their confidence were won, but it takes time and patience, qualities too often lacking in a busy clinic, where the needs of the older patients seem more urgent. However, if the beginnings could be detected, much of the later trouble would be avoided. This is a truism in medicine.

A little child is often nervous during the first examination, and in the tense eagerness or apprehension the smallest deviation in the position of the eye that is covered must be noted, although the vision of the eyes may be normal if they are both open. Such deviations may mean a number of things and, if associated with inferior vision in the eye that turns ever so little in or up or out when covered, it may mean that that eye is defective, amblyopic, we call it, and is in danger of a further loss of function because the other eye is dominating. Fleeting squint, especially when the child is tired or excited, should always arouse the suspicion of a beginning loss and lead to a thorough examination with atropin by means of the shadow test. Amblyopia from suppression in early squint is a curious condition. In some cases it is due to an organic defect. More often the child has normal eyes, no organic defect in either eye, but with a concentration of attention in the fixing eye, so that the

loss goes on imperceptibly and becomes irreparable after a very few months.

The younger the child, the quicker the functional loss. Worth has made this very clear in a series of examinations of a large number of cases in his excellent book on "Squint," and I recommend its use to some of you who are interested sufficiently to follow up this subject of amblyopia *ex anopsia*, or amblyopia from disuse, because it can be prevented in many instances. The child can be spared the loss of binocular vision and the increasing squint which inevitably requires an operation to restore the appearances of the eye later. However, although the eyes may be straightened, the vision is not restored if it has been lost functionally in these first few months.

The function of the nurse is of vital importance in detecting these squints. Families are neglectful, indifferent, and very often the nurse, when she visits them at the end of the day or in the evening, will note a little shooting of the eye in or up, and be able to call attention to it when the doctor himself at the clinic or on other occasions might not have had an opportunity to discover it.

In the testing of the eyes that was carried out here among the older children, I think it would have been well to watch the eye under the screen acutely. I think that is the time, while they are fixing intently with one eye, that the other is apt to deviate, and every little hint of that sort is valuable. Even if the vision in the eye that deviated slightly was normal, that squint would be enough to relegate it to the class of those who had to be examined by the physician.

There is a point which I should like to make tentatively and it may be that this is not the place to discuss it, but at least I would like to make the statement of my own feeling: I deplore the growing use of the term "eye consciousness," and yet it has its merits. We are not told to be heart conscious or stomach conscious. A child himself should not be nervous about his eyes, and we should not question him about his eyes except as regards proper light, print, and the position of the book, and adequate periods of rest. We should avoid the growing tendency towards an awareness of one's own sensation. Let the doctor and the nurse and, if necessary, the parents do the worrying. There is nothing more pathetic than an anxious child who will grow into a neurasthenic if questioned and watched too obviously.

I think glasses are given far less frequently now than formerly (the pendulum has swung the other way) except by the optometrist, for small forms of refractive error. If a child is taught to look off at distant things in frequent intervals of rest and to relax the eyes, as a beginner at the piano must relax the fingers and wrists or as one puts down a burden that he has been carrying with flexed muscles, it means rest, and the eyes often lose their tense strained look which means fatigue. Thus glasses which seem necessary may be discarded. An Australian named Alexander,

in a book called "Constructive Conscious Control of the Individual," shows how normal habits of co-ordination can be acquired, and much that he says could be applied to teaching children to work and play.

Professor Patrick has asserted that children should not learn to read or write until they are nine or ten years old. He thinks the mechanism is finer than is necessary, that the education should begin with the coarser activities. And it seems to me that letters, words and sentences should be taught at a greater distance in order to keep the eyes free from the activities of convergence and accommodation, which are at the root of all muscular eyestrain.

However, these questions are far from the subject under discussion, and yet to all of us who are absorbed not only in measuring the child's eyes but in caring for them they are not without interest. The nurse is the liaison between the physician and the family. This co-operation is of such recent date and so beautiful in its evaluation that it will undoubtedly lead to unexpected results which are perhaps impossible to foretell. In all fields of medicine it is the most promising product at the present time.

Part III

The Public Health Aspects of Trachoma

LEWIS H. CARRIS,
B. FRANKLIN ROYER, M. D., } *Joint Chairmen*

EASTERN ASSOCIATION OF INDIAN AFFAIRS
AND
NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS

Progress in Health Work Among the Indians

HON. H. J. HAGERMAN

Commissioner to the Navajos, Sante Fe, New Mexico

In the few words which I shall have to say I shall confine myself to my own reactions and experience in the Indian country of the Southwest. It is undoubtedly true that the trachoma problem is a very serious and a very menacing one. I am sure that is fully realized by the Government authorities themselves. In April, 1924, the Secretary of the Interior, together with the Commissioner of Indian Affairs, called a meeting at Gallup, New Mexico, to consider this problem. The Secretary himself came there and called together all the doctors from the Navajos' Reservation and the adjacent reservations. That was a new beginning of an attempt actually to face the conditions which the Government has gradually found do exist there.

Soon after that, Secretary Work, who happens himself to be a physician, brought about a very material reorganization in the Government Indian Medical Service. My own connection with the Navajos and with the Pueblos has been incidental and more in line with industrial matters than with health and sanitation. But the fact is that in dealing with Indian problems generally it is impossible to separate or segregate these different phases of their problems. They link together and must be worked out together.

For instance, there in the Navajos' country they have discovered some oil. That was the principal reason for my appointment. It has not yet resulted in any great accretions to their wealth, but promises to, and the question immediately arises as to what would be the proper uses to make of this money. Fortunately, the Government has acceded to the proposition that the Indians themselves should have very much to say about how the money shall be used.

At our annual councils the matter has been brought up. The Indians are very anxious to have it used along industrial lines and for the increase of their flocks, and so forth. But they have very definitely acceded to the proposition that it would be quite proper to use some of these tribal funds for the improvement of their health conditions and for sanitary purposes. And I believe that if a definite and clear program can be outlined for the treatment and prevention of trachoma some of these funds, which will, I suppose, in the aggregate amount in the next three years to some \$250,000 a year, can be used in the equipment and maintenance of trachoma hospitals.

After the meeting at Gallup, in 1924, the Government authorities went

ahead in a very effective way, defining the problem. Briefly, it resulted in the approximate conclusion that in this great Navajo country, where there are 30,000 Navajos, the general incidence of trachoma is 20 to 25 per cent of the whole population outside the schools, and probably a higher percentage, from 35 to 40 per cent, within the schools. Of course, when we say that we have to remember that it is very difficult to define just what trachoma is. That is a technical matter. The fact is there is an awful eye disease afflicting large numbers of these Indians. It does not make so very much difference whether its incidence is 10, 15 or 20 per cent, we know it is alarmingly prevalent, and is a national menace.

Later, we went in with a number of very good men in an attempt to find methods of dealing with the infection, and while a great deal has been said about the Indian Medical Service, I must say, from the standpoint of a layman, that some of these men were very remarkable indeed and did a great deal of excellent work. Then Dr. Fox came out there and held a clinic at Albuquerque. After that, Dr. Perkins, who is one of the ablest men in the Indian Medical Service, went out and performed many of these so-called "radical" operations and, according to his testimony, very successfully.

Again I do not think it so much a question as to whether that operation can be generally resorted to. At this time the problem is to find a way to carry on an effective campaign against this disease. The Government itself has realized for some time that if Congress could be induced to see the problem as it is and make the appropriations that are necessary for dealing with it, a definite schedule and policy could be defined and adopted. Many people have insisted that the only way to deal with it was to face boldly the situation and vigorously deal with it and to begin with segregating the children afflicted with trachoma from those who are not afflicted with it. There have been a great many practical difficulties in bringing that about.

The school program of the Government is thoroughly well defined and the appropriations by Congress are made upon a basis of the school schedule as it is defined. It is still very difficult for the officials of the Department to go to Congress and get appropriations on any other basis. This proposal to make separate schools was brought up. It met at once with the difficulties of securing proper appropriations. One must always remember that. But gradually it has been realized that even to begin a thoroughgoing campaign and adopt a clean and clear policy in connection with it, it would be necessary for the Government to accept the proposition that in the schools the children should be separated and segregated.

It is certainly a very great pleasure for me to announce that that principle has been accepted. Recently Assistant Commissioner Merritt went out into the Navajo country with a representative of the National Committee for the Prevention of Blindness. They went to Fort Defiance, which is a school in the midst of the Navajo country, and only last week

definitely recommended that the large Fort Defiance school be set aside as a trachoma school for the exclusive treatment of children afflicted with trachoma. That recommendation was sent on to Washington last week; the policy and plan were definitely accepted by the Commissioner of Indian Affairs and the Secretary of the Interior, and the school will be changed into a trachoma school on January 1, 1927. It seems to me that this is one of the most important steps which has been taken in the whole history of this movement.

All outside organizations, such as the National Committee and all others, can, with a definite aim in view, concentrate on a program and schedule for the treatment of this disease. Hitherto I think all of these outside agencies have been more or less at sea and they did not quite grasp how the thing could be attacked and dealt with. If any of the voluntary organizations have any definite ideas as to what should be done in the way of intensive or continuous treatment of the disease, here is the opportunity to co-operate and co-operate fully with the Government in its efforts to solve the problem.

I cannot speak authoritatively in any way about the incidence of trachoma outside of the Navajos, although the Government now has me linked up also with the Pueblos who live up and down the Rio Grande Valley in New Mexico. There are about 8,000 of them. Trachoma is more prevalent there than is generally admitted, although its incidence differs very materially in the different Pueblos. I should say, on the whole, there was about as much trachoma there on the average as there is among the Navajos. So is there among the Apaches in southeastern New Mexico and southern Arizona, and I am told in some of the other reservations farther north that trachoma is also very bad and on the increase.

It seems to me that it is the biggest of all questions so far as the Indians are concerned. It would be almost useless to educate the Indians whose eyes are, through the prevalence of this disease, going bad. Health and sanitation should be the first concern of the Government as far as the Indians are concerned, and it seems to me that industry and manual training should be the second, and general education the third. I think that order of precedence, as it were, is now generally accepted by Government authorities. At any rate, a new era has opened in the attempt to deal properly with this dreadful trachoma menace because of the recent decision by the authorities at Washington. I want to express to you very definitely and clearly the appreciation of both the Secretary of Interior and the Commissioner of Indian Affairs for the thoroughgoing and hearty co-operation and the very effective results that have already been brought about both by the Eastern Association of Indian Affairs and by the National Committee for the Prevention of Blindness. The Secretary particularly asked me to convey that message. He said he would like to have been here himself to tell you how much he does appreciate what you have done.

Prevalence of Trachoma Among the Indians of the Northwest

A. J. CHESLEY, M.D.

State Health Officer, Minneapolis, Minnesota

Representatives of the National Committee for the Prevention of Blindness are members of the Committee on Conservation of Vision, and with their aid I, as Secretary of the Conference of State and Provincial Health Authorities of North America, secured information about the prevalence of trachoma among the Indians of the United States in order to make a report to the State and Provincial Health Authorities in May, 1926.

The Bureau of Indian Affairs gave the number of Indians and the estimated number of trachoma cases in each tribe in 22 states for 1925. The State Health Officers were asked to state the number of cases of trachoma reported to them for comparison with the tribal estimates of cases of the Bureau of Indian Affairs.

Fifteen states answered: "No Report of Indian Cases." The Bureau of Indian Affairs' figures for these States are as follows:

State	Indians	Estimated Cases of Trachoma	State	Indians	Estimated Cases of Trachoma
Colorado	795	387	Nebraska	3,097	397
Florida	466	0	Nevada	2,312	339
Idaho	3,363	648	New Mexico	13,952	2,413
Iowa	363	20	North Dakota	13,328	1,419
Kansas	803	80	Oklahoma	123,732	6,424
Michigan	1,593	24	Oregon	4,774	568
Montana	13,087	2,127	Utah	1,172	456
			Washington	7,551	342

Total, 15 States, 190,388 Indians, 15,644 Estimated Cases of Trachoma.

In the other States the figures are as follows:

State	Indians	Estimated Cases of Trachoma	State Reports
Arizona	50,662	8,010	554 (records incomplete)
California	20,327	1,830	Not classified by race (2,155 cases, 1920-1925)
Minnesota	14,300	1,358	628 cases, 34 suspects (1912-25)
N. Carolina	2,611	48	29 (1925)
S. Dakota	20,328	1,419	24 (1925)
Wisconsin	8,352	347	79 (1924)
Wyoming	1,808	173	(Survey and clinic operating May, 1926)
Total	118,388	13,185	

Each State Health Officer was asked to describe his present resources for trachoma work. Wisconsin alone reported a state appropriation of \$8,000 per annum for health work among Indians. Five states include trachoma investigations among Indians in routine epidemiological work.

Special surveys of trachoma among Indians and others have been undertaken since May, 1926, in Arizona, California, Montana and Wyoming.

Dr. Charles H. Halliday, Director of the Division of Epidemiology of the California State Department of Health, telegraphed recently that intensive treatment has caused a marked reduction of trachoma in Imperial County and that surveys are under way in Riverside, Orange, Lake, Mendocino, Humboldt, and Sonoma counties which indicate high trachoma prevalence among Indians.

Experience in other diseases indicate that only when active operations for the control of trachoma are begun will the real prevalence of trachoma among Indians be learned. In Minnesota and Wisconsin, not only in recent times but for many years past, the state health departments have had the active and hearty co-operation of the Indian Bureau officials, medical and otherwise. The U. S. Public Health Service also has given most valuable aid in trachoma work, so that the information about the prevalence of trachoma is quite reliable, although not in any respect complete.

Dr. C. A. Harper, Health Officer of Wisconsin, uses his \$8,000 appropriation for general health work among Indians. He employed nurses, assigned them to Dr. L. L. Culp, oculist of the Indian Bureau. Traveling clinics were arranged where the nurses gathered for Dr. Culp all Indians with eye trouble. This work has resulted in a reduction rather than in an increase in the number of recorded trachoma cases. The reduction is due in part to the more careful observation with better opportunity for differential diagnosis.

In Minnesota, the U. S. Public Health Service has made extensive trachoma surveys. Recently it has, in co-operation with the St. Louis County Health Department, established a trachoma hospital at Eveleth, where Indians could be treated. Special effort was made to find all Indians with trachoma and to induce the authorities to send them for treatment to this hospital. The county authorities refused to pay traveling expenses although the Indians concerned were citizens of the State and not under the jurisdiction of the Federal Indian Bureau. A few new cases were found.

The Minnesota State Health Department's trachoma records we believe are quite reliable. Between 1912 and 1925, inclusive, in 41 of the 87 counties of Minnesota, 1,004 definite cases of trachoma and 92 suspected cases were reported. Of this number, 376 were whites, living chiefly where Indians also are found, and 628 were Indians. Of the suspects, 58 were whites and 34 were Indians. As there are about 14,300 Indians

in Minnesota, this prevalence is not alarming. Dr. Taliaferro Clark, of the U. S. Public Health Service, in 1912 examined 52,847 persons in 25 counties, finding 1.15 per cent with trachoma. Among 49,305 whites he found one active case to each 640. Among 3,542 Indians he found one active case to each seven examined. In 1922 he visited certain public schools in three counties where examinations had been made by him in 1912. His findings are interesting: In 1912 there was one Indian to 18 white children in attendance, while in 1922 there was one Indian to each three white children in attendance. In 1912 the active trachoma cases among Indians in school were 3.8 per cent as compared with 6.3 per cent in 1922. This means about twice as many infectious cases in schools, with about six times the chance for spread to whites through contact with Indians.

This might be interpreted as a discouraging outlook, but is that true, since the figures indicate that in 1922 there were six times as many Indians attending public schools as there were in 1912? Isn't the school the best place for the Indian children? They must live and compete with whites and school cases are easily controlled compared with cases not in school.

On the Mesaba Iron Range, as a whole, trachoma among school children seemed to Dr. Clark to be more prevalent in 1922 than in 1912, but there were practically no cases found among adults in 1922 on the Mesaba Range.

Dr. Culp holds periodic trachoma clinics for Indians, and the Division of Preventable Diseases of the Minnesota State Health Department makes routine epidemiological investigations of trachoma, trying always to secure proper treatment of trachoma patients through local agencies.

The actual prevalence of trachoma among Indians is unknown, but cases of eye diseases, including trachoma, have been brought voluntarily to the attention of the authorities since the Indians have learned about the successful treatment now available for trachoma. So, in spite of the difficulties inherent in Indian work, varying with tribal habits and local conditions, the reports on prevalence are more reliable than ever before, and with the excellent prospect for better medical and nursing service in the Indian Bureau and greater co-operation between the Federal and state health workers, the outlook for conservation of vision among the Indians is encouraging.

Experiences in the Treatment of Trachoma

J. A. STUCKY, M.D.

Lexington, Kentucky

I can best illustrate my remarks by telling you a story of a negro waiter who, when asked about a certain dish he had brought in, replied, "Boss, that is hash," and on being questioned further as to how it was made, replied, "Why, Boss, you don't make hash, it just 'cumulates.'" What I have to tell you is just an accumulation. I am not a scientific man nor a research worker but just a clinician, and my observations have been made on children, not guinea-pigs, rats, or rabbits.

The changes in the mountains of Kentucky as compared with fifteen or sixteen years ago, when I first rode up and down those creeks forty-five miles from a railroad, are almost unthinkable. What the United States Government has done through the U. S. Public Health Service in co-operation with the school teacher and trained nurse deserves the applause of the whole nation, but we are apparently no nearer the etiology of trachoma than we were then. We have found no specific cause for it and are still treating effects or results instead of causes.

From the public health standpoint, the trachoma patient is a liability, not an asset, though I have seen no such changes in the trachoma situation of any state as in the mountains of Kentucky, where conditions to-day, as compared with fifteen or twenty years ago, make us feel as if we were almost living in a new world. Fifteen, yes, even ten, years ago, I thought I knew a great deal about trachoma and was proud of what I knew for I felt I was doing things. To-day I do not feel so sure of myself from an etiological standpoint as I did then, but I do know we are getting results. If improper feeding can cause xerophthalmia and other destructive diseases of the eye, can it not also cause trachoma? My judgment is that trachoma is a deficiency disease, though that deficiency may not be the same in one case as in another, in a measure each case being a law unto itself.

On my first trip into the mountains of Eastern Kentucky I saw many women 25 or 30 years old who looked as if they were 65. They had few or no teeth, faces wrinkled and prematurely aged, and this condition was general. Later I concluded that this condition existed because these people needed remineralization, and I also noted that we saw few or no cows on our trips in that country, and in the little cabin homes where we stopped to eat the food and cooking were about the same. I gave them medicine to improve that physical deficiency, but I made slow progress, after which I concluded I could not get the needed relief out of the pharmaceuticals and I could not furnish enough cows to give the children

milk. On the second trip and clinic I began teaching the people about feeding and nutrition. Some of the stores where groceries were sold were selling cheap flour and cheaper sugar and candy. So step by step we came to the stage which we reached about five years ago and the thing that has helped us most in getting results was cod-liver oil, because these people needed Vitamin A and properly cooked food. When I talked of proper cooking, I would tell my nurses to show the people how to cook, and after telling them a number of times not to throw off the pot liquor after boiling the vegetables, but to drink it, this came to be a laughing matter, and they would say, "The doctor from the settlements told us to drink the pot liquor we used to throw out." However, to the extent that they used it, they improved.

We all recognize the fact that primarily trachoma is a surgical disease, and that no satisfactory progress is made until you rub off and out the trachomatous material, but I have found that there are no recurrences when I get their bodies built up by a well-balanced diet and the use of cod-liver oil. Therefore, with every trachoma case I treat now (and I do not see one-fiftieth as many as I did ten years ago, since they are sent to the Government Hospitals now) the fact remains that if I can keep them on a balanced diet for several months, get their bodies built up and keep them living properly, I have no recurrences.

Is trachoma infectious or contagious? I do not think so as much as I used to. I do not hesitate to-day to let trachomatous patients enter the settlement schools, where the nurses can keep them clean and they have a balanced diet. I have never seen a case I could truly say was transferred from one patient to another, though I do not say it could not happen. I used to believe it did, and I quarantined them, even having special places for them in the Lexington Hospital. However, I have not done this for ten years. Moreover, I have slept with them and been in close contact with many cases of acute exacerbations, and so have numbers of my nurses who have made the clinic trips with me, and none of us contracted it. Why this deficiency has an affinity for the eyelid I do not know, nor do I know why some malignancies have a tendency just for certain glands or abdominal organs.

I think it a good sign of the times when a great authority like Bloodgood on cancer states he believes the prevention of cancer is going to depend on our building up our powers of resistance. Many of these people have an endocrine imbalance or deficiency. Why? Because they have not been eating foods which supply the need of the endocrine glands. We know now there is a difference in the food value of soils, and that wheat grown in Minnesota is different in food value from that grown in Kentucky, the same being true of all grains grown in different sections. I am to-day having five different sections of the mountains send me a handful of shelled yellow corn, oats and wheat, with the idea of having them tested for food value in the hope of producing for these people a standardized

cereal. They can grind up these grains on an improved, old-fashioned coffee mill, thus making their own cereal, and by taking a small dose of cod-liver oil three times a day when they cannot get plenty of milk and butter. If they eat anything the rabbits eat, they will be kept in good condition. They are urged to use old-fashioned brown sugar and not this refined stuff, which the Council of Pharmacy, in an American Medical Association editorial, says is nothing but a diluent. Our super-refined flours of to-day are beautiful but they do not make the fiber that resists disease. What is a balanced diet for one is not for another. We have been generations getting away from rational feeding and it is now becoming a national problem.

I want to offer the conclusion of a paper read at the South Carolina Ophthalmological and Oto-Laryngological Society in Columbia, S. C., where the pediatricians are doing a wonderful work on the food problem: "If foods deficient in mineral substances can shorten the life of rats and guinea-pigs and rabbits, can lessen their growth, induce disease and bring premature senility and organic decay, why in the name of reason do we not see that similar food practices will shorten human lives, lessen their rate of growth, induce decay and bring on premature senility and organic decay? Just a little lack of mineral matter and a little lack of vitamin that is all. A very small matter to the thought-free, unscientific mind, just as the keystone of an arch is a small thing, yet the arch could not exist without it."

A few clinicians are teaching and advocating this, yet a larger percentage of the rank and file of the medical profession are apathetic and indifferent. Therefore I look more to the public health nurse and school teacher for help. Robt. G. Jackson says, and I agree with him, "We are daily teaching the dangers of breathing foul or baked, stagnant air, of drinking impure water, of keeping the mind from burrowing into channels of thought that depress without realizing that it is easier to think uplifting thoughts, so that the bad water and bad air would be potentially less dangerous if the protective potentialities were developed and maintained by proper hygiene and nutrition. We must urge instruction in hygiene and proper care of the tuberculous, with proper protection for others. We try to regulate and protect community health, but we are inconsistent when we so flagrantly neglect the genesis of sickness and disease at their most prolific source, the very component parts of the body itself."

I feel we are just beginning to live in a really optimistic age. I am not prepared to make any positive statements about trachoma except that we are getting results. If I had time I might tell you a great deal about my observations in the use of food and cod-liver oil. In addition I prescribe lemon juice and milk sugar for a few days, giving them the juice of one lemon with two heaping teaspoonfuls of milk sugar in a glass of water, once or twice a day. Again let me say, where I have been able to keep my patients on a balanced diet, after a thorough grattage (if this is necessary), combined with cod-liver oil and hygienic living, I have had no recurrences.

The Indian Service's Part in the Control of Trachoma

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I should like to refer to the reported incidence of trachoma among the Indian populations for a number of years back. In giving these figures, it is well to keep in mind a number of factors which have an influence upon the results as reported. These are: Diagnoses as a rule might be termed field diagnoses, that is, they are made upon one examination in the field under which conditions even experts may at times confuse follicular and other conditions with true trachoma; the diagnoses are also made by physicians whose experience with this disease has been limited; that certain of the figures, probably most of them, include "suspicious" cases with "positive" cases, and that also a considerable amount of duplication occurs by reason of the fact that special physicians surveying reservations for this disease principally examine a certain proportion of Indians who have been included in the annual figures sent in by the regular physician of such jurisdiction. Also, it should be remembered that when efforts are made to gather together a considerable group of Indians for examination by a physician, the tendency is for those who have some eye condition to come in while those free from abnormal eye conditions remain away. These factors undoubtedly have a bearing upon the incidence of trachoma as reported among the Indian populations of the country throughout a considerable period of years.

In 1910, an examination of approximately 20,000 Indians by physicians of the Indian Service showed about 20 per cent were affected with this disease. In 1912, the U. S. Public Health Service made a rather hurried survey among the Indian population of the country, and out of 39,231 Indians examined at reservation and non-reservation boarding schools, 22.7 per cent of that number were found to have trachoma. In 1915, the figures of the Indian Office give in detail the incidence of trachoma upon each reservation. I won't attempt to read that, but of a total figure involving a population of 205,450, there were 37,789 cases of trachoma, very nearly 20 per cent. In 1920, the Indian Office figures showed out of approximately the same sized population, 206,868, that 30,795 were reported as having trachoma. In 1925, 38,111 Indians were examined by special physicians who were engaged almost solely in the diagnosis and treatment of this disease and they found 7,236 cases, a percentage of 19.

At the end of the past fiscal year ending June 30, 1926, a questionnaire

was sent to the physicians on all Indian reservations asking for the incidence of trachoma among their Indian population, basing the findings for the total population on the percentage of cases found in a certain number examined. Unfortunately, they gave the number of cases found, not the total number examined, and the figures could not be checked, but I will give them to you briefly for what they are worth.

First, among the schools the percentages were as follows: In Arizona, Phoenix School, 13 per cent; in California, Sherman Institute, 22 per cent; in Nebraska, Genoa School, 17 per cent; in New Mexico, Albuquerque School, 9.39 per cent and in Santa Fe School, 21 per cent; in Oklahoma, Chilocco School, 23 per cent, Jones Academy, 72 per cent, Meku-sukey Academy, 39 per cent and Wheelock Orphan Academy, 46 per cent; in South Dakota, Rapid City School, 29.3 per cent; in Wisconsin, Lac du Flambeau School, 10 per cent and Tomah School, 5 per cent; and in Washington, Tulalip, 9 per cent.

Through reservations generally the percentages were: In Arizona, Fort Apache, 33 per cent, Hopi, 36 per cent, Kaibab, 9 per cent, Leupp, 20 per cent, Navajo, 20 per cent, Pima, 11 per cent, Salt River, 53 per cent, San Carlos, 15 per cent, Sells, 11 per cent, Truxton Canyon, 18 per cent and Western Navajo, 30 per cent; in California, Fort Yuma, 40 per cent and Mission, 10.7 per cent; in Idaho, Fort Lapwai, 14 per cent; in Kansas, Pottawatomie, 42 per cent; in Montana, Blackfeet, 10 per cent, Crow, 30 per cent, Flathead, 15 per cent, Ft. Belknap, 50 per cent, which is probably too high, Ft. Peck, 15 per cent, and Tongue River, 23 per cent; in Nebraska, Winnebago, 10 per cent; in Nevada, Moapa River, 20 per cent and Walker River, 25 per cent; in New Mexico, Northern Pueblos, 39 per cent, Pueblo Bonito, 9 per cent, and San Juan, 27 per cent; in New York, New York Agency, no cases reported; in North Carolina, Cherokee, 20 per cent; in North Dakota, Ft. Berthold, 15 per cent; in Oklahoma, Cantonment, 14.5 per cent, Cheyenne and Arapaho, 12 per cent, Kiowa, 12 per cent, Ponca, 30 per cent and Seger, 70 (?) per cent; in Oregon, Klamath, 17 per cent, Umatilla, 5 per cent, and Warm Spring, 11 per cent; in South Dakota, Cheyenne River, 16 per cent, and Sisseton, 12.5 per cent; in Utah, Uintah and Ouray, 25 per cent; in Washington, Tulalip, 10 per cent; and in Wyoming, Shoshone, 20 per cent.

Now with reference to these figures that I have just given you, I should say that they were collected by physicians throughout the Service, many of whom are inexperienced in the diagnosis of trachoma. A relatively rapid turnover in these physicians also makes the collection of accurate and orderly statistics very difficult.

I have also some figures by special physicians who have been engaged for several years practically on whole-time duty in the diagnosis and treatment of trachoma, and I judge that their diagnostic ability in this disease is quite accurate. Dr. Perkins, of this class of physicians, for the

last half of the fiscal year 1926, working in Arizona among the Fort Mojave and Truxton Canyon agencies, examined 1,123 Indians and found 232 cases, 19.77 per cent. Dr. Richards, a special physician, working at Fort Defiance, Arizona, Navajo Agency, for the last half of the fiscal year 1926, examined 1,590 Indians and found 631 positive, percentage, 39.68. I think the higher per cent of his cases has been influenced to some extent by the fact that Dr. Richards is located at one point largely for the treatment of trachoma. He has established the reputation of being an excellent surgeon in this work, and it is rather presupposed that most of the Indians in coming to him seeking relief have something the matter with their eyes before they start. This would influence the number of positive cases in his findings.

Dr. Ross, a special physician, for the entire fiscal year 1926 examined 4,146 Indians, found 627 positive, a percentage of 15.12. His work was divided among the following agencies, with figures for each: Keams Canyon (Navajos), at two points, examining a total of 1,483 Indians, positive findings, 183 cases, 13.23 per cent; Leupp Indian Schools (Navajos), 409 examinations, 82 positive cases, 20.05 per cent; Western Navajo Agency: Boarding School (Navajos), 288 examined, 40 positive, 13.89 per cent; Moencopi Village (Hopis), 242 examined, 45 positive, 18.6 per cent; and San Carlos Agency (Apaches), 1,824 examined, 277 positive, 15.19 per cent.

Dr. Hailman, a special physician, for the last half of the fiscal year 1926 working principally in Oklahoma, but partly in Navajo country, examined 894 Indians, found trachoma in 379, or 42.39 per cent, which I think may be somewhat high.

Dr. Culp, special physician, for the last half of the fiscal year 1926 working in Tomah, Hayward, Lac du Flambeau and Keshena, Wisconsin, Wahpeton, North Dakota, and Pipestone, Minnesota, examined 2,109, found 133, or 6.31 per cent trachomatous.

Dr. Yates, a special physician, for the last half of the fiscal year 1926 working at the Blackfeet and Rocky Boy Agencies, Montana, and Shoshone, Wyoming, examined 1,375 Indians, found 592, or 43.13 per cent trachomatous.

Dr. Collard, for the last half fiscal year 1926 working in Salem School in Oregon, Fort Hall, Idaho, Uintah and Ouray, Utah, and Flathead, Montana, examined 1,624 Indians, found 117, or 7.20 per cent had trachoma. Later in the year Dr. Collard examined 523 Indians at Colville, Washington, and found 52 cases of trachoma, or 9.94 per cent.

Dr. Barton, a special physician, for the fiscal year 1926 working in Arizona, New Mexico and Southern California, Oregon and Nevada, examined 2,338 Indians, found 277 with trachoma, a percentage of 16.11.

This group of examinations made by specialists skilled in the diagnosis of trachoma represented a total of 15,722 Indians, with 3,130 positive cases, a percentage of 19.91. This occurred in the last half of the calendar

year 1925 and the first half of the calendar year 1926, and the average percentage throughout the country corresponds very closely to the percentages given in the estimates for 1910. They are influenced somewhat markedly, however, by the findings of the special physicians who worked very largely in trachoma and to some extent also by the findings in the Navajo country whose percentage ran up to 42 and a fraction. These figures also, I should say, are influenced by the fact that we have had a group of special physicians working for two or more years operating on a fairly large number of cases by more or less radical operative procedure and which should have reduced the incidence of this disease in the respective localities where they were working, perhaps not inconsiderably.

At the end of the fiscal year 1925 over 8,000 cases had been operated upon by more or less radical procedure, and at the end of the last fiscal year very nearly 5,000 additional cases had been operated upon, and a considerably larger number of cases, something over 29,000, had been treated otherwise than by operation. Just how much the treatment and operative procedures of this group of physicians and general agency physicians, who have had an opportunity to become trained in the treatment of trachoma, has reduced the incidence of the disease in the various reservations and in the various schools, I would not hazard an opinion. I do not know at the present time what percentage of operative cases are cured as the result of that operative procedure and a fairly short post-operative treatment.

Also, while the reports of one of our special physicians indicate a high incidence of the disease among the Indians of Oklahoma, Dr. Mossman was in a part of that state recently, and of 500 or more Indian children examined by him in several schools, my recollection is that he found not more than 12 cases, which would indicate an incidence of less than three per cent. In 1912 I made the survey among the Indians of Oklahoma and, listing with the positive cases these also suspicious, I found the incidence all over the state to be very high.

Out of this mass of figures which I have given you, probably only fairly accurate, it is quite evident, I think, that our massive infection is among the Indians centered principally in the Southwest—in new Mexico and Arizona, among the Navajos, the Apaches, the Hopis and perhaps other groups; that the incidence also is very high in the Dakotas and in some reservations in Montana, and that also it is high in certain parts of the state of Oklahoma, notably in the western part. It does not seem to be so high in Wisconsin and Minnesota and in the extreme northwest, in Oregon and Washington; the figures that have been sent in by one of the district directors of the U. S. Public Health Service indicates not above possibly 15 per cent, and up on the Puget Sound section there are groups of Indians among whom recent examinations disclosed no trachoma at all. I was somewhat surprised at these latter findings.

As has been said before, whether the incidence of trachoma reaches

10 per cent or 20 per cent or even 50 per cent, as some very good men say exists among the Navajos, is not so material in view of the fact that we know that we have quite a large number of cases of trachoma among the Indian population, and certainly a sufficient number to call for the very best and most careful agencies of prevention and cure that can be brought to bear upon this problem.

Observations of Trachoma Among the Indians

WILLIAM CAMPBELL POSEY, M.D.

Philadelphia, Penna.

I will confine the few remarks I have to make to the trip which Dr. Proctor and I, as members of the committee from the American Medical Association in conference with the Department of Interior, made to the Southwest. We found trachoma everywhere among the Indians. In fact, we no sooner got off the train at Albuquerque than we noticed some half-dozen cases of trachoma among the squaws who were sitting in front of the Harvey Building selling Indian wares. We visited the principal Indian schools and government hospitals in that region. I will first speak of the schools. We found trachoma in all of the schools, and this notwithstanding the fact that the schools we visited were very well organized and conducted. The children bathed under running water; they wiped their eyes on individual Pullman towels; the bed linen was clean. The exercising places were large, and the children all seemed to be well nourished and well fed. In spite of this, it is a definite fact that there is more trachoma among the pupils at the end of the school year than at the beginning of the year. Furthermore, from what we could gather, there were instances of Indian families who were free from trachoma before their children went to school, who acquired the disease after their children came back to their homes. In view of these facts, when we returned to Washington we recommended strongly to the Secretary of the Interior and to the Chief Medical Director that these diseased children be separated from those with unaffected eyes, and we advised the creation of trachoma hospital schools, something like those that were organized in London some twenty years ago. At that time the London County Boards found a great deal of trachoma among the London poor children and built hospital schools in the outskirts of London where affected children might be sent, not for a few weeks or months but for years and kept under close observation and skilled medical treatment until such time as they might be free from the disease. At the expiration of this period the child is returned to society with sound eyes, seeing eyes, and many of the boys going into the Public Services of the British Empire.

We recommended the creation of such schools in the Indian region in the Southwest and we pointed out to the Secretary of the Interior that perhaps this might be accomplished by turning one of the present schools into a trachoma hospital school, and it was with great delight to-day that I read that the Government is going to do this and that they are about to

create such a hospital school at Fort Defiance. I consider this to be one of the greatest steps looking to the eradication of the disease which has yet been taken. I think the Indians are fortunate in having as Secretary of the Department a medical man who has shown his wisdom in getting officers from the U. S. Public Health Service to oversee the work of the Indian Medical Service.

The treatment of the adult Indian is a rather difficult matter and I doubt very much whether much can be accomplished until a long period of years has elapsed. If there were any radical procedure which could be used in the treatment of trachoma, it might be accomplished in a comparatively short time but, unfortunately, there is no radical cure for this disease. The disease must be treated for months and even years and, unless better living conditions can be obtained than are found at present among the adult Indians of the Southwest, it can never be eradicated. I think the Government has already taken some excellent steps in the direction of cure, but I think that it might do still more. It might do still more to educate the adult Indian of the dangers of trachoma, and what their sore eyes mean. I believe it could establish more community centers where the adult Indians might be taught by means of moving pictures and where they could receive instruction, by word of mouth from those who speak their own language, how to care for their eyes.

Some of you may be interested to know that we visited the village of Santa Clara and that we were shown about by one of the Indian governors of the village. We questioned him about his eyes, and he said that he was free from the disease, which was apparent, and also that many in the village were free from trachoma. He explained: "We have had a nurse coming here who has told us how to care for our eyes, to wash under running water and to use individual towels." Whether all those dwelling in the village followed those excellent rules or not I do not know, but at least he knew what to do, and that is the main thing.

I believe that until the Indian is brought under better hygienic conditions of life it will be impossible to cure trachoma. The conditions of living in a hogan filled with smoke are most irritating to the eyes. Their life on the desert, with alkali sands blowing into the eyes; their scarcity of water; and the extreme cold in winter, are all very trying conditions of life. Unless these things are ameliorated in some way, we will never get rid of trachoma in the adult Indian.

Trachoma is a disease which has lasted through the centuries. Many think the child becomes infected from the mother at the time of birth. We saw one interesting child at Fort Defiance, three months old, with very marked development of the disease. All authors agree that the disease may be seen a very few days after birth.

The Government has an efficient bacteriologist at work trying to differentiate the organism which may cause trachoma. The Rockefeller Institute has one of the best bacteriologists in the world at work on the

problem. It is hoped that good may come of these efforts. In the meantime I feel that as the children are being educated in the schools, educated in better manners of living, as successive generations of these children go out from the schools and impart the knowledge gained there to their parents to practise hygienic rules in their homes, trachoma will be gradually eradicated from Indian territory.

The Clinic in the Control of Trachoma

PAUL B. MOSSMAN, M.D.

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I have been asked to refer briefly to my trip to Oklahoma this fall at the request of the Indian Service, where I examined some 700 Indian pupils in the boarding schools and found, as was reported, substantially three per cent of positive trachoma. I was careful to differentiate real trachoma, and those figures include only cases that I would stake my reputation on. There really were not more than that many cases which were very doubtful.

We of the medical profession are prone to think that we are the special repositories of all worldly and especially scientific wisdom, but it is refreshing once in a while to have some wisdom shown us from the outside, and I was quite delighted to hear Governor Hagerman enunciate a very important epidemiological fact with regard to prevalence.

We are continually asked, "How many cases of trachoma are there?" Of course, in a chronic, wide-spread disease like trachoma it is impossible to get accurate figures. As Governor Hagerman says, as long as there is enough to constitute it a problem it does not matter whether there are ten per cent or fifty per cent. The problem is there, and the difference in figures matters very little.

Among the white population of this country, of course, we have the disease more prevalent perhaps in the mountains of Kentucky, West Virginia, eastern Tennessee, practically all of Arkansas, and the southern half of Missouri. I estimate that there are 10,000 cases in Arkansas and perhaps that many in Missouri.

In regard to treatment, we maintain at the present time four hospitals—one in each of the states of Kentucky, Tennessee, Arkansas, and Missouri. These hospitals are operated in co-operation with state health departments and we adapt large dwelling houses as more or less temporary hospitals where we accommodate from twenty to thirty patients on the average, and they are kept there under treatment. Our treatment usually covers a period of one to two months, sometimes longer, sometimes shorter, but generally not shorter than a month.

We have conducted a large number of field clinics where we go out into the field, a doctor and two or three nurses, and examine the cases that have been brought in or that have been sent in by the propaganda work of the local health authorities, and we undertake some treatment and a great deal of educative work.

We believe that while trachoma requires surgical treatment, merely a grattage or other surgical procedure is not the sum total of the treatment; that post-operative treatment is just as important and just as necessary as the operation. If you see a case in the field clinic that you can operate on and send him back to his own home without prospects of follow-up treatment, after-treatment and follow-up advice, you had better not grattage him because you do him more harm than good. I have believed that for a long time and am believing it more firmly every day. We are doing nowadays less and less of operation and more and more of teaching in the clinics that we are holding.

Personally, I believe that trachoma is a communicable disease. There is, however, a wide variance in the susceptibility of different individuals, and we are at the present time conducting a study to evaluate the factors in the environment of the individual which influence his susceptibility to the disease.

One of the officers of our service who is a well-trained epidemiologist, started this summer on an intensive survey of an area, perhaps twenty miles square, in the trachoma-infected area of southern Missouri. He is carefully surveying the homes of all the people in a county who have trachoma, and after he has finished that study he will then take up a similar number of families in which trachoma has not occurred, and endeavor to evaluate the factors existing in one case and not in the other and see what he will find out. Of course, we have been making this study for only six months, and you must not ask for results or even data yet.

An interesting picture of one home was given which I should like to present to you just as a sample of what we have. There was a man who had been married twenty years ago, a tall, slender man. He was married to a stocky, well-fed type of woman. The man had trachoma when he was married and is now in the scar tissue stage. His wife has never contracted trachoma. They have four children, two of whom resemble the father in conformation and face and those two have contracted the disease. The other two children who are dark complexioned and stocky have not contracted the disease. They have had every opportunity of contracting it, living as they do in a three-room log cabin with only one bed in the home. Three of the children sleep on the floor and one sleeps in bed with the parents. They alternate. Each child gets one week in a month in the bed. And the sanitary arrangements of the home are in that proportion. There is nothing conclusive about that, but it is just suggestive as showing that certain persons may be exposed to this disease and not contract it, and that possibly there is some factor of individual immunity which may be transmitted from parent to child.

So much for that, which I do not wish to be accepted as a conclusion at all but just as a hint or a suspicion. We are not drawing conclusions prematurely on the study that is being made, because it is still in process of being made.

I believe that the importance of the clinical phase of our work is due to the fact that we are making the treatment available to these people who have heretofore not had access to careful, thorough treatment. They have been unable to afford it. They have been at the mercy of quacks who have bled them for what little money they had and they have learned to distrust people who said they could do anything for trachoma, and some of them who have gone to city eye specialists have been discouraged by being told that nothing could be done for them. We have demonstrated that the treatment is worth while. We have gone into the communities and into the homes and established contacts. They have found now that the Government doctor is as human as any one else and that they can safely trust themselves to him. We have given them the hope of cure, and by reason of this they are not only coming to our hospitals but to practising specialists, according to those in the territory in which we operate. They are making use of the facilities offered. They are getting away from the idea that this thing is an act of God, like harelip or clubfoot, or some deformity that comes on them at birth.

I have long had the opinion that these people regarded this thing as an act of God that they couldn't escape from, but I never had it put into words until a year ago in southeast Missouri. I was asking a woman about the prevalence of the disease in her family. She said none of the children had it, but she had it herself. She said, "It was so willed that I was the one to have it." If we can get that idea out of their minds and substitute the idea that treatment is available and worth while, we will have made a great step forward.

Then, hygienic education and treatment are more hopeful among the children; the disease is more readily cured, and the children respond more readily to hygienic teaching. We have had children (even white children) eight or nine years old who have never had a bath. We get them so that they actually enjoy taking a bath and look forward to the time when they can take it—which, incidentally, is more than once a week in our hospitals.

We realize that we have not made this teaching as effective as we want it. We realize that our whole scheme is not perfect, that it is subject to improvement. We are trying to improve it all the time, and we are putting on the table a well-balanced diet and teaching these folks that there is something good to eat besides salt pork and cornbread, and we are trying to get them to drink milk and eat green vegetables and fresh meat, and we intend to go much further with this.

I have not had an opportunity to mention our bacteriologist, who is perhaps the best trained bacteriologist of the Hygienic Laboratory at Washington, who is devoting her whole time to bacteriological research in connection with our hospital in Missouri. We have there at Rolla, Missouri, my office, which is headquarters of the trachoma prevention work of the U. S. Public Health Service, a trachoma hospital of twenty-

five beds, which some of you gentlemen have visited, and the bacteriological laboratory, and also the headquarters of the epidemiologic work. A study is now being made of this area—about twenty miles square in a neighboring county—and if any of you are ever within five hundred miles of that district, we would be very highly honored and complimented and pleased to have you visit us and see what we are trying to do.

Trachoma in Illinois

MARION A. CAMPBELL

Executive Secretary, Illinois Society for the Prevention of Blindness, Chicago, Illinois

Trachoma is a very vital problem in Illinois. The southern part of the state is located directly in the trachoma belt, just between Kentucky and Missouri, with the physical conditions which promote the spread of the disease similar to those in these adjoining states, and there is great need in Illinois for just such work as is being done in Rolla, Missouri. I hope some plan may be worked out whereby it may eventually be extended into Illinois.

During the year in which the Illinois Society for the Prevention of Blindness conducted its demonstration clinics in five of the counties in southern Illinois, we discovered, what you have all been discovering who have seen trachoma in its native atmosphere and conditions, that the most faithful and thorough work of any clinic may be rendered quite ineffectual in real control of the disease unless it is as faithfully followed up with continued treatment facilities; and, while it has not been possible to carry our experiment out through the State government in any wider manner, because of a change of administration in Illinois directly after we closed our year's work and had made recommendations for further extension of the clinical service, we are satisfied that the most effective work of the clinics was made such by the follow-up service of the nurses who took over the patients of the clinics and who are still working in some of the counties where the clinics were held. This year of clinical service was the result of a study extending over ten years and conducted by the staff of the Illinois Charitable Eye and Ear Infirmary, in which it was disclosed that a very impressive number of the people in the southern part of the state were traveling a distance of two hundred miles to Chicago for treatment for trachoma, in many cases in the advanced stages of the disease. Furthermore, it was also disclosed that this expense and loss of time from mine or farm were in most cases of no effect because so few of the patients could afford to remain more than a few weeks, but were obliged to return to their homes before they could hope to receive any permanent effect from the treatment secured.

The plan to take clinical service to the people in a series of traveling diagnostic clinics was endorsed by the State Department of Public Welfare, which bore the major expense of the year's work, the State Department of Health, the University of Illinois Medical College, the American Red Cross and the State School for the Blind, all of which furnished mem-

bers of the staff. It was later endorsed by the county medical society, the women's clubs and other organizations interested in public welfare in each locality as we visited it with the clinic. There is no question that the result of the year's work has helped toward the solution of our problem in Illinois. It has focused the attention of each locality on the real problem in its midst, on the possibility of meeting and controlling the condition, and has brought treatment facilities into the locality from the well-nigh inaccessible previous treatment center.

In leaving nurses in touch with the patients and with the local physicians we did the most effective thing toward real and permanent control of the disease, and it has been interesting to note the results in so far as we have been able to check up on them; for instance, in a small town which is not so far from Herrin but that it shares with it many of the characteristics which would make it difficult to secure the best co-operation in a medical service, there was a local oculist who worked most faithfully with us in arranging for follow-up treatment. Our clinic records for that county showed, I think, a proportion between seven and nine per cent of the school children, who were examined in a hasty and somewhat superficial method due to the limitations of the schoolroom equipment, to have suspicious indications of trachoma. The nurse reported to us (and this we had expected) that a large proportion of the children so suspected and who were excluded from school during treatment periods, after being under treatment for a month or so, were cured and satisfied the local eye specialist that it had not been trachoma. The nurse also reports, however, that a certain proportion of the cases are still under treatment and giving indications of a probable permanent cure. In that locality none of these children had, previous to the clinic service, been under suspicion of the disease, and only an inconsiderable number of trachoma patients had had treatment with the local specialist.

That was four years ago. We have had reason to believe that the local physicians who finally endorsed and worked with us in the clinics are more appreciative of the situation which trachoma presents locally, and we had abundant evidence that the patients whom we found in the outlying hills and rural sections, never having been under treatment except through patent medicines which they had bought through newspaper advertisements, came to have more confidence in medical treatment. Is it not, therefore, in the last analysis a matter of getting the confidence of the people and restoring their confidence in the possibility of medical treatment, and establishing such nursing service as will continue the educational propaganda for the control of the disease and will stimulate the necessary follow-up treatment? We in Illinois have been, and still are, very hopeful that a federal health service directed against the spread of this disease will eventually include our state in its field of activity.

Training Indian Women for Nursing Service

S. J. CRUMBINE, M.D.

General Executive, American Child Health Association, New York, N. Y.

The experiment of securing trained nurses who are Indians grew out of a visit I chanced to make in Minnesota in 1923, when Dr. A. J. Chesley, the state health officer, invited me to visit the Indian reservations with the view of going into the general health aspects of Indian living. It was a most interesting experiment. Along towards the close of those four interesting days, after having visited the homes and the shacks of many families and talked with the Indians themselves, the mothers and the children, one of us said to the other, "I believe this health problem of the Indians will never be solved until we have Indian nurses who can speak their language and have a sympathetic understanding of their customs and habits and can approach them in an educational and a preventive way." The other agreed fully with that sentiment, whereupon we hatched a scheme right then and there that if the state department of health would put up half of the money I would telegraph to headquarters to see if we could raise some money to finance the other end of the proposition and secure, if possible, two Indian nurses for this experiment. At that time we did not know whether there was such a thing as an Indian nurse. We laid the matter before one of the Indian physicians, a very capable, thoughtful chap. He thought it was a good idea, and he said, "By the way, there is an Indian nurse who is serving in the hospital in Dakota who was at home visiting." We went to the home of the Indian nurse, talked to her about it, and much to our gratification, found great interest on her part.

Briefly, this plan went through. The state department of health used Sheppard-Towner funds to finance this proposition, and may I be permitted to make the side remark that if Sheppard-Towner funds never did anything else but launch this experiment, it has been worth all that Congress has appropriated up to this time. Happily, these Indian nurses were found. They were put in a short training in public health in the state health department. I have had the pleasure of going back two succeeding summers and going over the field. It is a perfectly remarkable demonstration of what Indian nurses can do among Indian people.

It is true they have not applied themselves to the trachoma problem. They rather applied themselves to the task of gaining the confidence of the Indians and of serving their immediate necessities, whatever they might be. Their chief major problem is tuberculosis. Out of that has

grown also a tuberculosis hospital, situated on that charming Leech Lake in an Indian village. These nurses have gathered the children, not the hopeless adult cases, for this institution, so that now even the minds of the Indian parents are turned toward the nurses for help. In asking the Indian agent a year ago last summer when I was up there as to whether or not this was proving a success, whether nurses were filling our ideals and their mission, he said, "My best answer is the parents are constantly calling for them."

Wisconsin in the mean time had a notion that they wanted to do the same thing, and they are doing the same thing. Their legislature has appropriated a sum of money for health work among the Indians. They, too, have put in nurses. In Minnesota they now have fifteen nurses in training in the hospital at the university. Haskell Institute in Kansas is giving nursing training, and thus a movement has started among the Indians themselves, which is a most significant thing to record for it is going to bear great fruit. I haven't the remotest doubt of that. But the chief significance of this lies in this: For the first time, so far as I know, a state department of health has deliberately set about to assume its responsibility, where it rightfully belongs, to meet the Indian health problems. Likewise, Wisconsin has done so by direct action of the legislature.

When I was state health officer of Kansas I was perfectly aware that trachoma was present on the government reservation. I had no authority there. I had no business to meddle in what I then considered the Government's affairs. That condition has changed. Indians are now citizens of their respective states, and when the other states assume their public health responsibility, as Minnesota and Wisconsin have thus assumed it, we are going to see the beginning of the solution of this problem. I congratulate these states. There may be other states of which I do not know, but these two are recognizing their responsibility and tackling it in an effective way. The problem will not be solved until other states follow the examples, notwithstanding the splendid attitude of the Department of the Interior and the U. S. Public Health Service from Washington. The regularly authorized agencies in the respective states must grapple with this problem or it will never be solved.

Discussion

CHAIRMAN CARRIS: Now I am going to do something that is without any warning to the man, but he never has failed me in the last year. It is so important that this next part of this study should be properly directed, I am going to call upon my co-worker, Dr. Royer, to direct the discussion on the next two topics.

DR. B. FRANKLIN ROYER (Medical Director, National Committee for the Prevention of Blindness): I picked up a very fortunate little statement by Dr. Coon, an Englishman, a few days ago, and I am taking the

liberty of paraphrasing some of it, just changing a few words here and there because it sets the problem squarely before you, and especially before the ophthalmologists. The attack on any disease is opened by the clinician. He defines its boundaries and thus limits the issue. After him comes the pathologist who traces the disease back through the stages of evolution to its source. He is in turn succeeded by the administrative health officer and it is he who attacks the disease at its source. This sequence has not been deliberately devised by us. It has evolved itself, appearing at the appointed time. It has been successful, far more so than any conscious contrivance of man could have been.

If those of you who are concerned with the preventive side of this disease have been successful in your attacks on other afflictions, such as typhoid fever, typhus fever, yellow fever, plague, malaria, and even now diphtheria, why should you not win fresh laurels in this less romantic but nevertheless necessary struggle against trachoma, a world-wide scourge? But if we ask you workers in preventive medicine to do this we must first define the disease that we ask you to combat and we must offer you some kind of information as to the probable causation.

How far are we able to do these things today? In the first place it must be admitted that with a possible exception of the word influenza, there is no more abused term in all medical nomenclature than the loose way in which the term ophthalmia has been used. It would seem that the very first problem then for the ophthalmologists to set themselves to is to follow the directions of Dr. Coon and carefully limit the boundaries of what we shall accept as trachoma. As Dr. Sprague has repeatedly pointed out, many things are called trachoma that cannot by hook or crook be classed as trachoma. It is no reflection upon the doctors far back in the country working alone without much special training that they should vary between statistical limits of prevalence of anywhere from 35 to 50 per cent. Certainly the truth is somewhere between those limits; these rural doctors and health officers cannot be expected to make the diagnosis when the ophthalmologists themselves have not yet defined the problem and set it squarely before those who must carry on.

As to causation, that is to come up in one of the listed topics. The etiologic factor has not been satisfactorily determined by any one. That is a basic thing in our efforts at eradication. The epidemiologic study of trachoma, the tracing the disease back through its stages of evolution, has not yet been done, and that also is fundamental in eradication.

In the problem of medical relief in treatment to spare the individual from the ravages of the disease as it progresses, a tremendous amount has been done by the ophthalmologists and much of it recently the best kind of work. Millions more are needed to salvage a lot of vision that would be wasted without medical care. Lastly will come the problem for the administrative health officer, several of whom we have here to-day, and they are the officers who are trying gradually to wipe out trachoma and they are the administration officers who of necessity must be the ones to wipe out the disease.

I am going to ask Dr. Martin Cohen, who has been working in the field of etiology, and who is perhaps the best informed ophthalmologist in New York City on the problem of trachoma, whether he will not start the discussion on etiology.

DR. MARTIN COHEN (New York, N. Y.): The first ten years in practice I devoted to the study of the differentiation of allied conditions

simulating trachoma, because at that time there existed, in the opinion of a great many ophthalmologists, no definite clinical differentiation.

I sought the opinion of experts abroad and also had the opportunity of observing early and advanced cases of trachoma.

Regarding the communicability of trachoma, I believe it is only mildly contagious. We cannot compare it in this respect with gonorrhoeal ophthalmia, Koch-Weeks infection or pink eyes, which are readily communicable.

One of the doctors this morning mentioned that he had seen instances where there were several members in one family affected while others escaped infection, where no precautions had been taken in any degree. I have observed similar cases, frequently; also I have seen patients with only one eye involved while the other remained normal. This might be due to individual immunity.

Dr. Noguchi and I have published several articles in regard to the bacteriological etiological factor in trachoma. When the eminent investigator Prowazek thought he found the causative agent in trachoma known as the trachoma bodies, the profession at first believed it now had the cause, but Heyman and others proved the contrary. We were of the opinion that these bodies were the cause of an independent conjunctival disease; Noguchi isolated these bodies but could not transmit them to animals.

I believe, once trachoma always trachoma: but at the termination of the disease it is possibly less contagious, since the conjunctiva is free from secretion.

The conjunctival secretions are the medium for the spreading of the disease. The dry conjunctiva is much less communicable.

It is also my belief that trachoma, so prevalent among the American Indians, is the same disease as we see in New York City.

In my clinical experience I probably see from 300 to 400 new eye cases per month: of that number, only one case of trachoma, possibly two.

About the year 1901 the health authorities believed that an epidemic of trachoma existed in this city. The school children, then, were systematically examined for trachoma and a hospital was established for the treatment. I was associated with one of these institutions for many years. Finally, I came to the firm conclusion that most of these cases were not trachoma but follicular conjunctivitis cases. At first they were treated operatively by expression with roller forceps. This treatment has since been abandoned.

Follicular conjunctivitis will respond to simple cleanliness of the eyes, without any special treatment. The disease is only mildly contagious. The operative measure succeeds in removing the follicular secretions from the follicles, but leaves the disease tissue.

The procedure in the treatment for trachoma consists in surgical operation combined with medical and general treatment. The surgery radically removes the diseased tissue which causes the disastrous sequelæ, as lid deformities and corneal opacities. The after-treatment consists of hot compresses applied locally, atropine drops and solution of copper sulphate drops in glycerine 1%, and wearing dark glasses. These patients should receive the benefit of fresh air, proper diet and hygienic surroundings.

Whether trachoma is due to a specific organism or a combination of organisms has not as yet been proved scientifically. However, I still believe that we should continue our efforts in bacteriological investiga-

tions combined with clinical observations until the causative agent can be scientifically established, so that this disease, which affects vision to such a disastrous degree, be more definitely recognized and finally, if possible, eradicated.

CHAIRMAN ROYER: We have with us this morning a man who has spent thirty years at one of the great immigrant stations. We all know what the United States has done in trying to exclude trachoma. We would like to have Dr. Sprague tell us just a few words about the situation with reference to immigrants at the present time.

DR. EZRA SPRAGUE (Chief Medical Officer, Ellis Island, N. Y.): The question of trachoma is one that has been giving us considerable concern at Ellis Island for a great many years. We have had it coming to us continually for the last thirty years. At present, the number is running comparatively low and we are very glad to be able to state that fact.

During the previous years, up until about 1924, you will remember immigrants were coming from all over Europe and some parts of Asia and Africa. In other words, there was no limitation placed upon their entrance or the country from which they should come. The result was that a large number came in from southern Europe and that is the great trachoma field of that continent. The Armenians are especially afflicted in that direction, but at present I would not say that we are finding more than five or ten cases of trachoma a month. We are thankful for the fact that the immigrants now are coming almost entirely from northwestern Europe, from the old Nordic and Anglo-Saxon stock, which never has carried trachoma to any extent. Then there is inspection going on on the other side. We have at the present time about thirty odd officers at work in the various ports of Europe engaged in the examination of immigrants previous to their departure for this country.

All of the conditions which we class in our immigration work as Class A, that is, those that are mandatorily excludable, are, of course, apprehended. That is, there is not one in 10,000 that gets by them, and when they do, it is more or less of an accident.

In regard to the diagnosis of trachoma, I have often wondered whether trachoma was actually recognized or whether we at Ellis Island more particularly had a different notion in regard to the disease than anybody else. A man of international reputation here in New York City only a few months ago told one of the employees at Ellis Island he was afflicted with trachoma. As a matter of fact, if he actually had been afflicted with trachoma it would have been the first case so far as our knowledge extends that has ever arisen on the island. Of course, we are all very much interested in it. I am free to confess that when I came to examine that man's eyes (I did promptly have a diagnosis made by a prominent physician) it was not the kind of eye condition which we have been stopping at Ellis Island for thirty years. It was a different proposition altogether. I had brass enough to tell the victim that if he went over to the hospital and obeyed the direction and took the treatment of one of my officers over there, he would get well. I vow I was right. He did. In a matter of a few weeks he was in pretty good condition. I know Dr. Royer is laughing. I showed the case to him, I think, one day when he was down there. There is one case of trachoma that was cured. It was a simple proposition.

I can get almost a hundred per cent cure, but the trachoma that we stop at Ellis Island we do cure, and I think Dr. Royer will agree with me that some of them we have down there are pretty tough propositions.

CHAIRMAN ROYER: The next speaker on whom I am calling traveled through Oklahoma and Missouri with a group of six (starting at Dallas, Texas, in May), including Professor Wilder of Chicago, Dr. Holloway of the University of Pennsylvania and Dr. Yudkin of Yale University, who were afforded an opportunity by officers of the Indian Bureau to see any number of Indians. We went through large groups of Indians assembled at hospitals and we saw a large group of Indians in day schools. We went through boarding schools; we turned the upper lids of 140 girls in one boarding school alone. I am not going to ask Dr. Yudkin to say very much about the problem. I don't want to steal his thunder, but in one boarding school where in November of last year 100 per cent of the girls in the school were reported as trachomatous, this group found three cases of trachoma and two doubtful cases in April. That does not mean much. Many cases can be mentioned with just as wide variance.

I am going to ask Dr. Yudkin to stick to one specific topic, that of the need of epidemiologic and etiologic research, because that is his particular and special field. I won't ask him to give anything in confidence on what I happen to know he has started, but he may go as far as he likes.

DR. ARTHUR M. YUDKIN (Yale University, New Haven, Connecticut): The etiology of trachoma is still an open question. Numerous causative agents have been described at various times. All efforts to discover a virus which would reproduce the typical clinical and pathological picture of trachoma by inoculation in animals and at times in man, have proved futile. Nevertheless, it would be folly to deny the presence of a germ which is transmissible when writers of great repute have shown trachoma to spread as other infections do. The organism is probably conveyed by the conjunctival discharge. The disease is considered by many only relatively contagious, and an individual susceptibility or predisposition is necessary for its transmission.

The clinical picture of this disease in its early stages is still a matter of doubt in the minds of some capable ophthalmologists. I have seen the diagnosis made on one clinic day and changed on another. At one time it appeared as though there was an epidemic of trachoma in our public schools, but by careful study of the situation and upon some advice from Dr. Martin Cohen, I concluded that it was not trachoma that we were treating.

For several years I have made an experimental study of ocular disturbances produced by feeding diets deficient in vitamins and certain mineral salts. In this investigation an eye disease comparable to xerophthalmia and keratomalacia, found in man, was induced in albino rats by removing vitamin A from their food. Histologically it was noted that the epithelium of the conjunctiva and cornea was involved in the early stages of this disease and the deeper tissue was destroyed when the experiment was permitted to continue to an advanced stage. The pathological picture is different from trachoma, for in the latter lesion the lymphatic tissue of the lid is involved.

However, some experimenters have been able to change the lymphatic tissue of the body by manipulation of the diet. These studies can be controlled only in a well-regulated laboratory. I believe that such an investigation should be made so as to decide, once for all, whether trachoma is an infectious process or is produced by a deficiency disease or a combination of both.

In order to guide the laboratory worker, a well-conducted epidemiological study should be made and a thorough investigation of the mode of

living and statistics of the daily food intake of these afflicted individuals should be gathered for analysis. The combination of the laboratory investigator, bacteriological and chemical, and the above group, should give us a clue to etiology of trachoma.

CHAIRMAN ROYER: We had hoped to have Dr. Noguchi here and I had expected to call on him to say something about the needed etiologic research. The very fact that Noguchi is still working and that Dr. Martin Cohen is still working to try and find a possible etiological factor is apt to convince most of you that there has been no general acceptance of any such proved factor.

A letter has been published criticising a statement that was made in some papers put out by the medical director of the National Committee within the year, the individual believing that his own findings had solved this particular problem. You by your own actions have perhaps been just as doubtful as to conclusive results as I have been. I had hoped that some one might urge that there was need of further continuous bacteriological study until it was definitely proved either that there was a bacteriological or a parasitic factor, or that perhaps there might not be. We may say there is. That does not prove it. We may say there is not, and that is just a matter of opinion; it does not mean anything.

Dr. Crumbine very aptly put in a promising note as to what may safely be urged, that of the public health nurse. Dr. Stucky in his splendid talk showed you that his very right arm would be taken away unless he had the public health nurse to follow up and teach living conditions in the home. Some gloomy notes have been raised as to whether the cases are ever cured. Those of us who saw the splendid work at the Rolla Hospital and how hopeful they are as to the way the cases are holding up after they have been relieved of this scourge by operative measures would feel, I am sure, like urging that the operative measures and the remedial measures asked along these lines should be multiplied rather than held back in the slightest, and it has been the aim of the National Committee, and I am sure it is that of the Eastern Association, to urge with all of our force that more and more remedial measures be provided. But at this time we both feel that there are enough moot problems in etiology and in epidemiology to remain a challenge to those who are ready to finance such work and that we should all urge and urge strongly that these problems be cleared up in order that, as Dr. Cohen has pointed out so well, the administrative health officer may have the facts upon which he may work for the complete eradication. It is certainly true if nurses are to be the great right arm of the service that the administrative health officer shall provide them, and that legislatures shall be sold on the idea that they must be provided. It is true that for the remedial work that is now done co-operatively by state and by government your state legislatures must more and more assume their responsibility that those who may be afflicted may be cured. That residual of disease coming from we know not where, caused by something about which we know nothing, is the thing after which the health officer must go, and it has not yet been proved that we have the factor upon which we may make the best and most rational kind of difference. I had in mind that possibly a man not trained in the field of medicine, but who knew the history and the evolution of the Indian, might perhaps be able, after having listened to all of this particular discussion this morning, to sum up and crystallize some thoughts that would exactly fit the situation.

DR. HERBERT J. SPINDEN (Harvard University, Cambridge, Mass.): There is one thought which comes to me and that is this: For the Indian, the high incidence and extreme concentration of this ravaging disease of trachoma is a tragedy and a calamity, but for science it is an opportunity. In New York, where trachoma seems to have been reasonably prevalent twenty or thirty years ago, it is now very rare, but we now have this concentration of disease in the Southwest. We find it in all stages from the very young to the very old—new cases and old cases. We have hospitals which we are developing for the treatment of these cases. Here then is an opportunity in this focus of Indian trachoma to obtain the essential facts, the natural history of the disease. Surely science in America will not pass up the opportunity that is now offered!

Trachoma is found nearly all over the world. Its history seems to point to the Old World as the point of origin. Of course, if it is a constitutional disease due to diet or something of that sort, the cause might recur independently, but if it really is an infectious disease caused by an organism, the likelihood of independent spontaneous origins of the disease in the two hemispheres would be very slight. The Indian, therefore, may have no immunity to this disease. It may attack him in a particularly virulent fashion, giving to the student of the etiology of the disease an especial advantage.

I had a conversation with Dr. Noguchi and he led me to believe that this was exactly what he found when he went out into the Southwest, namely, extreme virulence, and that he was able to see and note the course of development of the disease much more easily than in New York City.

This then is the idea I have to present: namely, that the calamity of the Indians is an opportunity for modern scientific research, and I should like very much to see some of the great organized bodies for the study of disease go in definitely behind trachoma and follow up this opportunity.

CHAIRMAN ROYER: We have with us to-day a public health worker, a state health officer, who has a trachoma bureau in his state department of health. I am asking Dr. Monger to say a few words about this part of his organization.

DR. JOHN E. MONGER (Ohio State Department of Health, Columbus, Ohio): I might state that our problem in Ohio in trachoma consists of the rather wide-spread distribution of the disease in the southern part of the state. Ohio is the gateway for the South; laborers in great numbers from Tennessee, West Virginia and the mountains of Kentucky enter the North through Ohio and find their first occupation in Ohio. Professor Allen Freeman, of Johns Hopkins, in 1917, was commissioner of health in Ohio, and he, in 1917 and 1918, started the work, placing Dr. McMullen in charge for a long period of time. I think that what did us more good than anything else were the clinics that were held in connection with the medical societies. They not only did good in treating the disease but they did very great good in educating the medical profession as to the diagnosis and treatment of trachoma.

MR. CARRIS: Just before the meeting closes I want to say one thing, and I would like to have Dr. Park Lewis say a word; that is, if we can solve trachoma, or help solve it here, we not only help the United States but we help the entire world. There is an international situation with reference to trachoma which ought to be mentioned if it is just a word.

MR. PARK LEWIS (Buffalo, N. Y.): I want to say that the reports as they are coming in recently have shown so definitely that conditions in Russia, in southern Italy, and in Egypt and the Near East on the existence of trachoma are such that it is by no means a local problem. It is a world problem, and we must, if we are going to make headway, co-operate, find out what they are doing and add what little we can. Possibly the results that are being brought out by these studies are going to be very helpful, not only here but elsewhere.

CHAIRMAN ROYER: Dr. Lamb will be good enough now to give just a couple of minutes to discuss the percentage of trachoma blindness in the State of Missouri and to give the high spots causing blindness in his state.

DR. HARVEY D. LAMB (Missouri Association for the Blind, St. Louis, Mo.): The amount and distribution are the only parts of the topic of trachoma that I should speak on. I don't know nearly as much about the remedial measures or the etiology as some of the men who have spoken, so I can add nothing except possibly as to statistics.

We find in Missouri from the latest figures among 5,392 blind adults that one out of every four adult blind has lost his vision through trachoma. We see that trachoma, as Dr. Mossman said, is much more prevalent over the southern counties. In many of these counties more than half of the blindness is due to this cause. In one of the counties there was one person blind from trachoma to 365 inhabitants. The county which has the smallest amount is St. Louis County and St. Louis City, one to 33,600. The average for the state is one to 2,466 inhabitants.

Dr. Mossman did not say why trachoma is more prevalent in the southern part of Missouri, though I think it has been brought out in the discussion. The southern half of our state is occupied by the Ozark Mountains. They are really hills, and of course the effects there are the same as in eastern Kentucky and Tennessee and in the Carolinas. The isolation of communities and the poverty from the barrenness of these hills is the cause of so much blindness from trachoma.

I might speak about the amount of trachoma in children as found in Missouri. Among 507 pupils at the Missouri School for Blind, attending there from 1905 to 1925, one in twenty of these had lost their sight through trachoma. Of 32 trachoma cases that have attended the school, 21 lost their sight by the time they were ten years old.

In St. Louis there is but 3.7 per cent of the blindness due to trachoma and most of that has come in from the Ozark region. I want to say just a bit about the differentiation of trachoma. This also has been mentioned, but it has gotten so that the nurses and social workers very often make their own diagnoses, and every case of folliculosis, every case that has little follicles, is called trachoma; that leads sometimes to rather unpleasant conditions, particularly among children. When the diagnosis of trachoma is made by an eye specialist, as frequently occurs in cases of follicular conjunctivitis, the stigma of trachoma is put on the child and he must be more or less isolated. I know of cases personally where children have been put unnecessarily to much hardship and trouble because some one had said they had trachoma.

As Dr. Stucky and Dr. Cohen have said, the contagiousness of trachoma must be very slight. In fifteen years' service at the Missouri School for the Blind I have not seen any case of trachoma caught at the school, and

we always have some active cases there. I do not think a case under intensive treatment is infectious to others. If a child has been under good treatment for a few months, it is perfectly permissible to allow that child in school with ordinary good hygienic precautions.

CHAIRMAN ROYER: May the Chair take a minute and a half, after thanking Dr. Lamb for his contribution, to sum up a little bit as to the prevalence of the disease? It is unduly prevalent among the Indians and in the great Appalachian country. We have somewhere between 5,000 and 25,000 Indians afflicted, and somewhere between 5,000 and 25,000 white Americans. It is a perfectly tremendous problem, with large numbers of people having their vision menaced.

As to the remedial and relief measures, would our co-workers be safe in the National Committee in urging further hospital service and further providing of skilled ophthalmological effort to direct the remedial treatment and would this Committee be safe to urge and urge strongly the use of public health nurses so that the general living conditions and social conditions of those Indians and white people might be elevated nearly to an American standard? Should we not be justified in urging our knowledge of nutrition and nutritional problems generally, urging that these nurses should teach a well-balanced diet, whether it has anything to do with decreasing the susceptibility to this disease or not? Certainly urging a well-balanced diet is one of the fundamental things in constructive health building nowadays. Are we not safe in urging, inasmuch as the etiology of the disease has baffled research workers until the present time, the advancement of measures for searching for an etiological factor and that, as the whole history of the evolution of the disease is not cleared up in relation to diet and germs, a modern new type of epidemiological research should be prosecuted not only in this country but in other sections of the country, not in a single section, but several sections here and perhaps with other nationalities?

Are those promising things in the light of our present knowledge? If we err, correct us; if we are right, endorse us.

Part IV

Louisa Lee Schuyler—In Memoriam

PARK LEWIS, M.D., *Chairman*

Louisa Lee Schuyler—Her Work

HOMER FOLKS

Secretary, State Charities Aid Association, New York, N. Y.

The invitation to say something about Miss Schuyler at this meeting was one which I accepted without a moment's hesitation, not in the least from a sense of duty, but from the instant recognition that it was a high privilege to speak of Miss Schuyler as secretary of one of the organizations which she founded, the State Charities Aid Association, at the meeting of another organization with the founding of which she had greatly to do, this Committee. As I gave the matter some thought, it seemed to me that rather than attempt anything in the way of an interpretation of Miss Schuyler's work or an appreciation of it, to which I should feel myself hopelessly inadequate, as any person might well do, it would be more desirable to give some statement of Miss Schuyler's life as a whole, to get a sense of perspective of that great personality, because what she did speaks far more loudly and far more instructively than anything we could say about what she did. This suggestion was welcomed and approved by your Director. So I shall speak, not particularly of Miss Schuyler's work in this Committee, but of her work as a whole.

To begin, then, Miss Schuyler was born in 1837. It is an easy date for me to remember because it was the year in which my native state, Michigan, was admitted to the Union. It joined twenty-six other states, not forty-eight, as at present. From the day on which George Washington became President of the United States of America and this nation was born, until the year of Miss Schuyler's birth, forty-eight years elapsed; from her birth until her death, eighty-eight, almost eighty-nine years. Miss Schuyler's life covered almost two-thirds of the entire existence of these United States of America. That reflection brought to me the thought that history after all is very short, and that the life of an individual who passes four score years may be relatively very long and exceedingly important.

We have some delightful glimpses of Miss Schuyler's girlhood and young womanhood in an address which she made before the State Charities Aid Association a few years ago and which we have happily preserved in a pamphlet entitled "Forty-three Years Ago." It was of special interest to us because in it she gave some account of how she came to take the first steps in the organization of the State Charities Aid Association.

She was spending the Christmas holidays at the home of her grandfather, Mr. James Hamilton, of Tarrytown. Her grandmother fell and

broke her arm and a great surgeon from New York City, Dr. Willard Parker, was called to Tarrytown to treat her. He had to remain over night. After dinner, before the blazing fire, he talked to the young grandchildren who were present, among them Miss Schuyler, and told them of the great hospitals with which he was connected in New York. He said that he had felt many times that the patients in those hospitals, who had to remain oftentimes a long time, needed some one to visit them, some one other than the doctors and the nurses, some one who would talk to them and bring to them simply a human interest. Miss Schuyler at that time was a young woman; it was late in the fifties—she was about twenty.

The thought was put before all the young people present, but in the case of Miss Schuyler it did not go in one ear and out the other; it remained. It remained quiescent by force of circumstances for some seventeen years more or less, before it could be acted upon. I have noticed that it seems to be a mark of great people to pick up significant ideas and principles from the remarks that may be made more or less by chance by various people and which to other people may convey little significance. These persons of special gifts seem to be attuned to the universe in a way that most of us lack, and from here and there they get ideas and thoughts which they instantly recognize as having very great potential value. It was so in this case, although events prevented Miss Schuyler from acting upon it for many years.

It reminded me of another similar event, namely, the discovery of vaccination against smallpox. You perhaps may have read that a medical student, serving as an apprentice, as it were, heard a very humble person waiting in the office of his physician remark in the course of an epidemic of smallpox in England that she was not afraid, that she wouldn't have smallpox because she had had cowpox. I have no doubt everybody except the young man thought, "What a ridiculous thing to say! What a superstitious crowd these people are!" But the idea caught this particular young man's attention and he never forgot it. It was about twenty years, I believe, before he could act upon it; before he found opportunity and resources to make the researches to discover whether there might be something in that chance remark of this unlearned person. It is characteristic, I think, of people of great minds and of great souls to draw their most useful courses of action from little things which to most people would seem accidental and unimportant.

Into Miss Schuyler's life, as into the lives of all Americans of that time, there now came the great crisis of the Civil War. Of course, it drove out all other interests for the time. Miss Schuyler was a member of the church which is now at Fourth Avenue and 20th Street, the Unitarian All Souls Church. The pastor of that church was a very remarkable man, Dr. Bellows, whose influence extended far beyond his own parish and far beyond his own city. He at once saw the necessity of having for the

Union soldiers all those services which the Red Cross now carries on for the American soldier in time of war. He looked about to establish and carry into effect some citizen effort on the part of the relatives and friends of the men who had gone to the front, and of citizens generally, to give comforts and satisfactions and communications with home, and all sorts of services that the Red Cross now gives. He thought, of course, of starting a committee. Everything seems to begin with a committee, and committees begin with the chairman.

As this wise and gifted man looked about his congregation, he thought of a young woman only twenty-four years old. Most of us, I think, look a little askance at people as young as that, when any important responsibilities are being thought about, as lacking in the experience, judgment, and wisdom that come with later years. I suspect we are mistaken; I rather think that if we set up a better standard of judgment and discrimination as to which of the young people are qualified for important tasks, we will gain greatly by utilizing more quickly and more frequently the energy and enthusiasm and confidence and ability of the young people of twenty-four or of little later years.

So Miss Schuyler became chairman of this committee which became one of the great organizations, the Sanitary Commission. I have thought with interest of the process which must have taken place by which this young woman of twenty-four, in whom her pastor had seen exceptional qualities, became aware of her ability to organize and to lead and to direct the work of others, and by which her friends and co-workers older than Miss Schuyler, many of them, just naturally came to her to be told what to do, how she became head of this committee of one church, which became a committee for all the Unitarian churches, a committee for all the churches of New York City, a committee taking in all the localities of the states of New York and of Connecticut and of New Jersey and of other large states near by—a tremendously great task of pioneering, of an organization of the most difficult sort, to be created in a very, very short time.

I know that Miss Schuyler must have entered upon that work with the same spirit in which her brother immediately enlisted in the army, and that she, with her hereditary interest in the public life of this country, must have felt ready to put her entire interest, with no thought of self, with no thought of limitation of hours, with no thought of avoidance of danger or over-strain, into this tremendous piece of organization work.

I was glad to see, when glancing over the report of the Sanitary Commission, a statement issued by Miss Schuyler in 1863 of the work of the Sanitary Commission. Speaking of the work of this citizens' organization, she said (it was in a sense an appeal to the people for further support) that of the 25,000 packages which had been forwarded through the U. S. Sanitary Commission of which, in this part of the country, Miss Schuyler was the constant and devoted head, *one* only had been lost. In

the storehouses of the commercial express companies in Washington were 25,000 packages that could not be delivered to those to whom they were sent.

I was interested, too, to see that this Sanitary Commission, under Miss Schuyler's leadership, very shortly saw that volunteer service as volunteer service could not be held responsible, and that Miss Schuyler very soon adopted the principle that everybody who worked for the Sanitary Commission must be put on the payroll and must be held completely and wholly responsible. They could turn their checks back, if they wished, at the end of the month. There was nothing against that, but meanwhile they must take a distinctly subordinate position and act on orders.

To the best of my information and belief, all during those years Miss Schuyler was the recipient and repository of information of the most extraordinary importance and value and strategic significance, which never once, because of this organization she had set up, caused any harm to the armies of the United States. She rendered, as it was put, the maximum of service with the minimum of risk.

At the end of this war work, which I regard as Miss Schuyler's first great public service, there happened that which, I suppose, was bound to happen under such circumstances. After this grilling job of four years of improvising a tremendous information service and a tremendous express service and tremendous other services, when the end came, there was a complete physical collapse, an illness of the most persistent character, complete exhaustion, so that the slightest effort to read a newspaper for ten minutes or to walk a dozen steps caused great suffering and entire incapacity for anything else for a whole day. It was a question, touch and go, whether Miss Schuyler would ever be able to do more work. Travel abroad, rest in Egypt, complete isolation from all duties, responsibilities, and even contacts, not for a few weeks but for years, brought relief and cure. It was seven years after the end of the war before Miss Schuyler was able to enter again the ranks of the workers. That was in the fall of '71.

It was some time since the late '50's when Dr. Willard Parker had been up to Tarrytown, but the moment she was able to work she recalled that thought of his that in the big public hospitals there was something needing to be done. Meanwhile she had learned much about army hospitalism. She began, as you know, in West Chester County, visiting the West Chester County poorhouse in the autumn of 1871. She then returned to the city of New York and organized the group of visitors for Bellevue Hospital. You must bear in mind that in the '70's civil government in this country touched bottom, that we had tremendous scandals, for which we still blush, in the national service at Washington, in our state government, and in the city government. Perhaps there never was a time when one could look with less confidence to being able to accomplish anything important through the public governmental civil

services. The striking thing about that little group of people which Miss Schuyler gathered about her (most of whom had worked with her in the Civil War in the Sanitary Commission, whose abilities and whose qualities she knew) was that nothing seemed too great for them to undertake. I should put that down as perhaps Miss Schuyler's greatest characteristic, that of complete readiness to undertake the thing that needed to be done when convinced that that was what needed to be done, wholly irrespective of the difficulties that seemed to be in the way.

I suppose she measured in a way her own powers correctly. She knew the resources that she could draw upon of friendship and loyal support, but far beyond that and above all that she had a tremendous confidence in the force of public opinion when informed, bit by bit, to bring about the needed change in any governmental service.

So this little group, with Miss Schuyler at the head, promptly addressed themselves to two equally seeming impossible tasks, one of cleaning up the internal administration of Bellevue Hospital by placing it under a training school for nurses; the other, at the same time, of getting a complete new outfit of buildings for Bellevue Hospital. The first of those two they accomplished. It is a long story; it is an extraordinarily interesting story. It is told in detail in a chapter of a book by Mrs. Joseph Hobson, who was one of Miss Schuyler's intimate co-workers, "Recollections of a Happy Life." Mrs. Hobson was a member of that special committee which established the training school for nurses at Bellevue. It is fascinating reading, though I think I should caution any physicians who may happen to be present that it is not pleasant reading for a doctor.

This piece of work was the second big piece of work I think of in connection with Miss Schuyler, the establishment of the first general training school for nurses in the United States of America. To get a new hospital was too big a job under those circumstances even for Miss Schuyler. That was delayed about fifty years, but Miss Schuyler's committee that she established had the satisfaction last spring of seeing the appropriation made, partly through their own continued efforts, for the last unit of the great new hospital that is taking the place of the old Bellevue.

To hurry a bit to the third great undertaking with which Miss Schuyler was intimately connected, always working through an organization. She herself said in this talk of hers, already referred to, that in the war she learned the tremendous power of organization which she had not at all sensed before. She had now organized similar committees to visit public institutions throughout the State of New York. At the office of this organization here in the city, to which she went every day and gave constant service, she received reports on these different poorhouses all through the state and on the different public hospitals. She examined them to see what things were worst, what was the thing that most needed to be done. She soon came to the conclusion that the thing that

most needed to be done was better care of the insane. They suffered most from an uninformed and unintelligent but not necessarily ill-meaning type of care in the ordinary county poorhouse.

She set about asking how they cared for the insane in other countries where they had longer experience, how they took care of the insane in other countries of a high type of civilization, and what was the remedy here. She turned aside all the compromises that were offered, one by one, of mixed systems and of subsidies, and of gradual progress, and after real searching inquiry nailed her flag to the mast of a single, unified, unqualified system of State Care for all of the insane. To many "practical" people that sounded wholly visionary. All the experienced people at Albany smiled indulgently at any one who could think that the State could be brought to take care of all these people, and that the local institutions which enjoyed the privileges and the patronage and the benefit of buying for all these people in their localities could be discontinued, these essential cogs in the political organizations in those localities. They smiled at the idea that all that could be upset by a little group of people in New York City calling themselves some kind of an association, and led by a Miss Schuyler. It was occasion for mild amusement rather than for any real alarm. But then began that process of information and education, of arousing public opinion, of the collection of data, of verifying reports, of informing the public here and there, and soon of putting a bill in the legislature of New York State (in 1888), a bill which caused the same indulgent smile at the overconfidence of these good people who would spend their time and their money in such a hopeless and visionary effort as that. As a matter of fact, the bill had been fully prepared by competent legal advisers the year before, 1887, but was not introduced because there seemed to be no prospect of serious consideration.

In 1888 the Bill was not reported from Committee in one House, and in the other was reported "for consideration only." It did not reach a vote in either house. But the same process of educating the public mind went on and went on and on and on, and the next winter the same bill was taken a little more seriously. Perhaps there was some likelihood that this called for opposition, otherwise it might possibly slip through. There was well-organized opposition. This year the Bill passed one House, but was lost by 15 votes in the other.

This same year an official inquiry was made about the condition of these people and a public report made on it. Next year (in 1890) the bill was introduced again, the same principle all the time, no departure, no listening to the talk of compromise, no cheap and easy and simple devices to get part of it—half a loaf this time and some more the next time—but going right straight ahead, turning neither to the left nor right, aiming for the thing that originally was centered upon after an adequate, careful and thorough study, as being the only real solution.

This was the real test. Miss Schuyler was very dependent upon edu-

cation of public opinion, but at the same time she was not at all unaware of the existence of such things as political organizations in this State of New York, or any other state, for that matter. She was aware of all the different kinds of influences that play upon the group of men who sit there in the legislative chambers, but above all particularly of their local constituents at home. She was a general by this time in this service army in behalf of these unfortunates. It was just before my time, but I can recreate the picture of how, as the time came on, she got a list of all these members and she had them all canvassed, one by one, and then again and again to make sure. She had reports in from everyone of these localities, out in the state, as to how so-and-so was going to stand.

The State Care bill was the big thing of the winter at Albany; it was "the big bill" of the legislature of 1890. It absorbed the maximum of attention in New York City papers. It was discussed everywhere. Then came what I should suppose was, perhaps, the most dramatic day in Miss Schuyler's life, when in the assembly chamber^r she had to see that bill come to a vote.

Both sides were skilled in the art of securing the passage of legislation; they were not guessing on what was going to happen, they had them all lined up, and knew exactly what the latest word was about every man there. Miss Schuyler, on the floor of that chamber as a visitor, had to see the vote called for, knowing that she had only two votes to spare, that all of this work of ten years hung on holding the forces intact, that if two men out of all of them changed their mind while the speaking and voting was going on, all was lost for that year, all to begin over again. I can imagine how tense it was, and how she kept that tally sheet before her as one man after another explained why he was going to vote yes or no; but they did not change, the lines were drawn tightly, the work of preparation had been done with infinite detail, with every precaution that could be thought of. No surprise occurred and the bill was adopted by a majority of five votes in the Assembly of the State of New York, three changing over to the affirmative while the voting went on. The Senate was sure.

That was Miss Schuyler's third great achievement and that, perhaps, may be said to have been the last one that fully drew upon all her resources of mind and of spirit and of determination and of will. I am inclined to think that Miss Schuyler never fully recovered from the illness that followed her concentration and continuity of intensive effort during the Civil War, because from the time I first knew her she was always subject to severe fatigue. She could not be held back from making an intensive effort on anything that interested her, but it was always followed by an overpowering sense of fatigue and inability to muster her forces and get them into action again on something else.

I shall hurry past the later things that she did in the State Charities Aid Association, such as the after-care of the insane, the colony for

epileptics and so on, other things that came a year or two apart, and come on to her fourth great activity.

She has written this up, too, in a most interesting and charming way in a letter to her intimate friend whom you have just elected to-day as a member of your Board, Mrs. Corinne Roosevelt Robinson, a lifelong friend of Miss Schuyler. She came home one summer day to her apartment on Madison Avenue and found, as you may perhaps have read, a collection of mail on the table in the hall—quite a few letters and several packages. The packages she put aside to look at some other time, as most of us do, but among them was one rather bulky looking, an official looking black-bound book, a state report. I suspect that most of us would have put that aside farther than the others. We would have said, "We will look at all the others before we look at that official report of the State of New York," because nothing would have less promise of being of interest to most of us. But it was different with Miss Schuyler. She took the letters and took this official report and said, "Well, I will sit down now and rest after my outing and I will just glance through this report and see what it is all about." Her eye was caught by some pictures in the report. It is a very striking instance of the value of pictures. We must not forget that pictures speak much more loudly and more forcibly and more intensively than text. There were some pictures of children and underneath were the words, "Children unnecessarily blind."

That phrase caught Miss Schuyler's imagination exactly as many years before that phrase of Dr. Willard Parker's about the women in the hospitals who needed some visitors to come just as human beings. "Children are unnecessarily blind," said Miss Schuyler. "Why unnecessarily blind? What makes them blind? Why doesn't somebody stop it? What a ridiculous thing in this day and age that children should be blinded when it can be prevented."

She did not really know much in particular about the blind, she had not really been especially interested in the blind; to the best of my knowledge, she had not had much contact particularly with blind people. We in the State Charities Aid had not done anything in particular about the blind, but that phrase instantly gave her a sense of the importance of the thing. "If these children are unnecessarily becoming blind, why not stop it? Is there anything more important than stopping children from becoming unnecessarily blind?"

This time she did not have to wait long. I quite well remember the few months and the year ensuing upon that because, while I have been a very poor member of this Board, a very silent, absent member for a good many years, I really earned a reprieve, I earned immunity from later duties, by the demands that were made upon me and other members of our staff in those early days when Miss Schuyler was finding out about this blindness matter—what was the law, and who was the state commissioner of health, and was the law carried out, and if not, why was it

not carried out, and how would you get it carried out, and who were the interested people, and what did the Educational Department think about it? She could think of more questions than anybody else I ever knew, and she knew when she had the answer, too. There was no turning Miss Schuyler away with any half-way business, she always went right to the authoritative, original source of material, and believe me, I was a very, very busy person during the next few months, while that idea was working itself out in Miss Schuyler's mind, as to how to go about preventing children from becoming unnecessarily blind in the State of New York.

To cut the story short, you know about the formation of the State Committee for the Prevention of Blindness in 1908. You know Miss Schuyler's part in that and how, in 1915, a few years later, there came into existence this National Committee. I put that down as the fourth of the great interests and the great achievements of Miss Schuyler's life: the Sanitary Commission, the Regeneration of Bellevue, the State Care of the Insane, and the Prevention of Blindness.

The time came when Miss Schuyler was still less able, by reason of years, to direct and participate actively in these things, but she was still always tremendously interested. In the spring of 1921 I happened to be abroad again for the American Red Cross, and as I landed at the pier downtown and was met by some of my loyal colleagues, before I got off the boat I was told by one of them that Miss Schuyler had had a serious illness since I had last received news from America before sailing. Some of you know about that illness, that her eyesight was almost, not wholly but pretty nearly, destroyed, that she could not read anything after that. Sometimes when I went to see her I knew that she saw me if I happened to be just rightly placed in relation to the light from the window, but a good many times I knew she did not see me, but the matter was never referred to. I never heard Miss Schuyler raise a question as to the fact that she no longer could see as she had done before. And you know it was a sentence to the life of the wheel chair, lying on the pillows, and a very much greater part of the twenty-four hours of the day to be spent in bed.

It was after a couple of years even of that that she wrote this remarkable letter to Mrs. Robinson, a letter which extended itself to eight and a half typewritten pages, recounting the formation of these agencies for the prevention of blindness. Miss Schuyler now could learn as to what was happening only from her friends who came to see her and told her, or from the limited things that could be read to her when the head lines were called out and she indicated what she would like to have read.

In the course of the years as they went by and the illness continued, she came to think, as most of us do, I suppose, under those circumstances, not so much of the particular things that she had been connected with herself individually as worker, but of those things that equally concern us all and concern all human beings alike, toward which their minds

turn, why we are here, what it all means, what life is headed toward; and her real companions in those closing years were not so much, with one or two exceptions, her devoted caretakers, as the great minds from whose works she wished to have read to her, the works that she particularly chose. Her daily companions were Milton and Browning and Tennyson, particularly Tennyson. I cherish among the things which I have on the walls of my home a typewritten copy of one of those poems signed at the bottom with a trembling hand by Miss Louisa Lee Schuyler, and dated only a year or two before her death.

It is a somber thought to feel that with the death of Miss Schuyler that particular branch of that wonderful family which combined the names of Schuyler and of Hamilton comes to an end. Neither of the sisters married and the one brother married but was childless. We do not know how much of that remarkable personality was strictly inheritance and how much may have been the influence of early association, of training in that remarkable home, of association during girlhood as she was privileged to associate with the widow of General Hamilton until she was quite a grown-up girl, and of the traditions of public service and of public interest that always characterized those households where she was. But at least we can say that for ourselves we shall do the best we can to continue through the years in our feeble and ineffective and insufficient way what Miss Schuyler did so superbly with such extraordinary devotion and extraordinary success.

Louisa Lee Schuyler—Her Character

PARK LEWIS, M.D.

Vice-President, National Committee for the Prevention of Blindness, New York, N. Y.

Mr. Folks has summarized so beautifully the important epochs in Miss Schuyler's life that it leaves comparatively little to be said in the short time that we have at our disposal. It seems eminently fitting, however, that I should say a few words in recognition of the remarkable character and signal services to humanity of this most distinguished woman. To those who believe in an aristocracy of birth in its truest sense and in the transmission of all that is finest and best in the line of descent, this typical American woman offers a splendid example. That quality which found expression in her ancestors, in loyalty, in statesmanship, in self-devotion and in courage, was especially marked in her and to it were added certain more feminine traits of tactfulness and consideration for others which made a combination of great rarity.

She had a directness of approach on any subject which engaged her attention and a clearness of view which are sometimes considered as distinctively masculine traits but which are by no means necessarily so. She seized upon the essentials of any proposition, and thrusting aside all irrelevancies, went at once to the heart of the matter. Having determined upon a course of action there was no hesitation, no wavering in her attack upon it. She was never satisfied until the course determined upon was put in execution. With such a vigorous intellect as hers to decide was to act. She made effective what to a lesser woman would have been impossible.

Among many occasions in which I had the rare privilege of meeting Miss Schuyler there were two which stand out so prominently in my memory that they will never be forgotten. These were the first and the last times that I saw her. She herself pictured most graphically, as Mr. Folks has told you, some years before her death the story of the arousing of her interest in the prevention of blindness, of the way in which the report of our Commission fell into her hands, of her idly turning the pages, when her attention was arrested by pictures of the groups of little children, in twos and threes, and even entire rooms full—all blind and each with a legend saying that all of these might have been saved from such a tragic fate had the right thing been done for them in the right way and at the right time. The thought stimulated her imagination. She pictured in her mind's eye these and many hundreds of others yet to

come, groping their way through life handicapped in the struggle for existence, denied all of the beautiful things that the blessed sunshine reveals to us. Then she saw the cloud which threatened to envelop them turned aside, she saw them freed from their thralldom, going boldly and unafraid, with heads in air, meeting life joyfully and completely as their birthright warranted. It was such a moment as must have come to the great emancipator when a like opportunity came to him.

We sat at her table in her beautiful apartment, then on Madison Square. With her was present her sister, to whom she was devotedly attached and with whom all of her plans were considered, her life-long friend, Mrs. William B. Rice, Mr. John M. Glenn, upon whose judgment she always relied, and myself.

As the discussion went on and the possible benefits of protective measures were considered, her expressive eyes lighted with enthusiasm. Three directors of the Russell Sage Foundation sat at the table. "What would it cost," she asked suddenly, "to put these measures that you suggest in effect throughout the state so that none of these babies need become blind?"

"Three thousand dollars," she was told.

"You shall have five," she said. "We will form an association to carry these plans into effect," and then and there was initiated the great work which gradually grew into this National Committee for the Prevention of Blindness, whose annual budget for the prosecution of its work is in excess of one hundred thousand dollars.

The second memorable occasion was again in her beautiful apartments, but now on Park Avenue. Eighteen years had gone by. The brave spirit had outlived the house which it had tenanted. Sight, which her generous efforts had preserved for unknown thousands, had at last forsaken her. Helpless, she was lifted by tender hands into her wheel chair. With intelligence happily undimmed, she was in the midst of a small group of friends. They had gathered on a late spring afternoon to present to her a gold medal which was to be a tangible expression of the high esteem in which she is held and of gratitude for her priceless gift to humanity. A few minutes were spent in casual conversation, then the dominant spirit asserted itself. "Shall we now have the formal presentation?" she asked. We had thought of no conventions in this little gathering around the chair of an invalid, but the proprieties had to be observed. "Shall we stand?" she continued. Then, in the quiet of the flower-decked parlor, in a few simple words were recounted that away off in the West—on the banks of the Mississippi—had been carried the echoes of her fame, and in recognition of her services to her fellowmen these had been recorded on a disc of gold which we brought to her with our appreciation, our homage and our affection.

The lights are out. The activities of a long and splendid life are finished. There is in chemistry a process called "catalysis," in which

the atomic structures are rearranged and a new thing results from the mere effect of contact. Surely there is an even greater power in the touch with such a life as that of Louisa Lee Schuyler.

“Influence is immortal. Every word a mortal ever spake or ever heard will wield its power, however small it be—throughout the countless ages of eternity.”

Louisa Lee Schuyler—Her Executive Ability

ELLICE M. ALGER, M.D.

New York, N. Y.

It is a great privilege to come here this afternoon and testify to the esteem and affection we all felt for Miss Schuyler.

I think the first time I ever saw her was some fifteen years ago, when I came as a representative of one of the groups which were united in the formation of this Committee. My acquaintance was therefore much more recent than that of many of you.

Miss Schuyler was even then an old lady, long past seventy, trying to perform one last service for humanity in organizing this National Committee for the Prevention of Blindness. She was evidently a great personage, with the mind of a lawyer and the decisiveness and the dominating will, almost ruthless at times, which we associate with the captains of industry. I knew that she had played several great rôles of one sort or another but I could not have told exactly what they were, and I think that is the picture most people to-day have of her.

Gradually, little by little, I began to hear of the things she had done in the several periods of her long life and I began to realize how great she really was. I have been impressed, as I have listened to Mr. Folks' illuminating sketch of Miss Schuyler's life, containing much that was previously unknown to me, with the feeling that here is a wonderful opportunity for one of the really great biographies. I hope he will see it as I do, for no one now living has been in such close touch with the activities of her life or has had a more sympathetic and affectionate understanding of its spirit.

In my many years of contact with Miss Schuyler, almost always in this National Committee, several things stand out in my memory of her. During all the years I never saw the slightest sign of personal ambition, in the usual sense. She was certainly persistent enough in having her own way and did not bear opposition easily, but she harbored no grudges and got no apparent joy from the wanton exercise of power, while the titles and distinctions that are so dear to most women meant nothing at all to her. If she could get the things done that she had in mind she apparently cared not a bit who had the popular credit. I do not believe she had much faith in the democracy of the *Vox Populi Vox Dei* type, and popular praise or popular disapproval meant little to her. She was by birth and conviction an aristocrat, but it was always the aristocracy of those who lead rather than of those who drive, and who serve but do not

exploit. Hence she placed importance on having an Organization, with its purposes and powers exactly defined by a meticulous Constitution, and what she called "the right People" behind it. And yet no politician was ever more adept in getting what she wanted by building up a vociferous public sentiment behind it.

In her whole life she never seemed to seek opportunity for service or distinction. Opportunities always sought her, as Mr. Folks has told us. And how she did use them when they came! A pastor in one of the smaller religious denominations asks her, a young girl, to head his committee to help the soldiers in the Civil War, and by sheer executive ability she expands it into the great national agency for that purpose. If she had had the genius to have called it the Red Cross she would have been immortal, for it lacked nothing but the name. But to her legal mind the title of an organization should define rather than idealize and it was called, if I remember aright, "The United States Sanitary Commission," and suggests to us to-day the plumber rather than the angel of mercy.

A casual conversation with Willard Parker, dormant in her mind for many years, led her to take up the work which she afterward developed into the "State Charities Aid Association"; and again we see that strange ineptness for names. For the State Charities Aid Association, in spite of its name, was the spiritual parent of the vast number of organizations all over our land which, by enlisting the intelligent oversight of the amateur in work which had been purely professional and often perfunctory, has breathed the breath of life into all modern charity and penology.

A casual glimpse of a report of Dr. Park Lewis led to the formation of our own National Committee for the Prevention of Blindness, while I suppose her desire to transplant to America the work of Florence Nightingale led to the formation at Bellevue Hospital of the first Training School for Nurses.

Miss Schuyler had the gift that most great people have shared, of being able to utilize the technical knowledge of others without ever having much herself. She is said to have done considerable almshouse visiting before she founded the State Charities Aid, but not much, I venture, afterward. She founded a training school, but so far as I know had no interest at all in the technical side of nursing and she never knew or cared to know much about the diseases which produced blindness or the ways in which they could be prevented. But she always knew exactly where she could get the information she needed.

One who has to rely on help of this sort without first-hand information of her own is prone to be led into many false enthusiasms and to follow many paths that have to be retraced. But no one ever picked her advisers with shrewder judgment or followed fewer false leads. Miss Schuyler's whole life was practically devoted to the service of humanity but I never saw the slightest trace of that false sentimentality which is

the bane of so much of our social work. If anything practical could be done, she was interested at once but she never allowed herself to agonize and sorrow over things she could not help.

So far as I know she had no particular interest in what so many women have considered the "great cause," the emancipation of her sex. I do not think women interested her more or less than men and I do not suppose she ever in her life felt handicapped because she had not a personal vote, though much of that life was spent in work which was essentially political. But when she founded her training school she made a great and almost unappreciated contribution to the "cause." What she meant to do was to enlist on a large scale the tenderness and refinement of woman, which have made the Hospital, once a minor factor in the jail or the almshouse, a place of comfort and refuge for rich and poor alike. What she really did was to extend the practical monopoly which women already had in the field of education so that it must eventually include almost the entire field of public health.

Some one has said that the supreme test of the great executive is that when he dies the corporate machine he has created goes on without the slightest pause, exactly as it did when he was alive, without its stock selling off in the market or any other suggestion of loss of public approval or confidence. If that be true of the great business executive, it was eminently true of Miss Schuyler, who has left behind not one but several great social agencies which bid fair to grow and spread and serve in a way in which even she could hardly have anticipated or hoped.

Louisa Lee Schuyler—Her Personality

WINIFRED HATHAWAY

Associate Director, National Committee for the Prevention of Blindness, New York, N. Y.

Miss Schuyler's life was probably of many meetings, yet I think she is the only person I knew to whom these never grew monotonous. For her, each was a serious affair, and it was prepared for as carefully as many people prepare for the great events in their lives.

When a meeting of the New York State Committee for the Prevention of Blindness was to be held, I always received what I considered a royal command. I was summoned to appear at the house. Miss Schuyler was never an early riser, and so the time set was usually 11 o'clock in the morning, but on these occasions I always warned my family not to expect me until they saw me, for Miss Schuyler preferred to work in the quiet of the night. Her favorite hours lay between 9 P. M. and 3 A. M.

On one of these occasions I well remember that we had a bill coming up for legislation. I never understood why she, a past master of the art of writing legislation, asked me to prepare the bill. It was my first attempt and must, I think, have been a very sorry affair indeed, but she read it with a great deal of care; then there came a twinkle in her eye and she said, "But, my dear, where are the teeth?"

"The teeth, Miss Schuyler?" I asked, bewildered.

"Yes," she answered. "A bill without an appropriation is like a mouth without teeth—it will never bite. Put your appropriation in first and build your bill around it. That is a good way to begin."

In the morning we would go through the agenda; then came luncheon time. Committee work was always laid aside, and Miss Schuyler became the gracious hostess. At this time her sister, gentle Miss Georgina, usually came upon the scene. Miss Georgina, who adored her sister, was always the Aaron to her Moses, holding up her hands and helping her to climb those Sinais on the summits of which she came face to face with the Infinite.

Luncheon was always just a little formal, and Miss Schuyler held the reins of conversation. What do you think we talked about? The Hall trial or the latest scandal? Our topic of conversation was more likely than not to be the Constitution of the United States. She knew the reason for each amendment, the why and the wherefore and when it had been added to the Constitution. To her, the Constitution was always present and always living. I wish all the boys and girls in America who

find it a rather dull thing could have heard Miss Schuyler make it vital and interesting. I am sure we should have better citizens.

At the end of my first luncheon there I remember her saying to the maid, "And haven't we a sugar plum for Mrs. Hathaway?" I had always heard about sugar plums, had read about them in the fairy tales, but had never actually seen anything that came up to my idea of this delectable. I must confess to a slight disappointment when this particular sugar plum proved to be an after-dinner mint. Coming from the hands of Miss Schuyler, I thought it would surely have something magic about it.

After luncheon we would go into the living room, and she would very graciously show me her pictures. "The portrait of my sister Georgina, painted by Bonnat in Paris in '65." "My brother in the uniform of the Federal Army." "My grandmother, Betsy Schuyler Hamilton, taken when she was 93." Then we always walked to a picture at the far end of the room and she would tell me something about it. "The Young Perseus going forth to slay the dragons. I am leaving that picture in my will to young Theodore Roosevelt" (he was always young Theodore to her), "because I think he is like the picture, going forth to slay the dragons of iniquity."

In the afternoon we would attack the agenda until it was tea time. How well I remember the fragile china, the firelight playing on the fine old silver, the dainty bits of toast and the little frosted cakes. At this function Miss Georgina always presided, and it was interesting to me to note the little courtesies that never failed between these two sisters who had lived together for over 80 years. "Louisa, dear, how would you like your tea?"

"Two lumps, please, Georgina dear, and not very strong."

People used to come in for tea; sometimes it was Theodore Roosevelt, who always found time when he was in New York to drop in for a visit; occasionally Mr. Taft was there, or Mr. DeForest, Mr. and Mrs. Folks, Mr. and Mrs. Glenn, Mr. and Mrs. Van Cleve. After tea the program was taken up again and we were then ready for the meeting.

The day of the meeting was a serious affair. Miss Schuyler always came early. There were usually some last points that she wished to talk about. The first day that I saw her there I noticed that she kept feeling around as though she were looking for a footstool. It evidently had been customary to use the telephone books. It happened this day that a member of the Committee wanted to look up a telephone number, so we hastily had to draw the book from under Miss Schuyler's feet. Our humiliation was extreme. Determining that this should never happen again, I went over to the school for the blind and bought one of the little footstools that the children there make and had it in place when she came next time. It seemed to give her real pleasure and at subsequent meetings she rarely failed to mention it.

Mr. Folks has spoken of Miss Schuyler's letter to Mrs. Robinson. I

recall spending long days with her helping her to write this very letter. Hours were spent in going over the English, for Miss Schuyler's appreciation of English was acute, and just the change of a word sometimes meant an hour of thought and patience. It was not only a matter of grammar and syntax or of actual meaning—it must be just the right word in just the right place and admit of no possible misconstruction.

I think the most human touch was shown the very last time Miss Schuyler attended a meeting of the Committee. "Mrs. Hathaway," she said very seriously, "there is something I should like to have you do for me yourself to-day. Will you promise to do it?"

"Miss Schuyler," I said, "you know it is always a privilege to do anything for you that I can."

"Well, you know at the last meeting one of the gentlemen took my coat. It was very kind of him, but he put it on a chair and then he allowed the other gentlemen to put their coats upon it. When I got home Georgie was quite vexed because it was very wrinkled and it was my best coat. Now, Mrs. Hathaway, won't you please promise me that to-day and hereafter you will see to it yourself that my coat is always hung up?"

One time when I was going to Albany, Miss Schuyler asked me to be sure to see the Schuyler mansion. When I had been there before there was very little furniture, but now I recognized the beautiful dining-room set that I had seen in Miss Schuyler's own apartment. On my next visit to her I was surprised to see a reproduction of the furniture in her own dining-room, and I mentioned it. "Well, you see," she said, "the original belonged in the Schuyler mansion; I wanted it to be in its real home. We can get along with the reproductions."

I think this act typifies the true spirit of Miss Schuyler. So many people would have said, "The reproduction will do for the mansion. We must keep the originals for ourselves." But Miss Schuyler believed in giving all that she had, knowing that in the doing lay the true value.

Louisa Lee Schuyler—Her Statesmanship

EDWARD M. VAN CLEVE

Principal, New York State Institute for the Education of the Blind, New York, N. Y.

Most appropriately we should close with Mrs. Hathaway's account of the human side of Miss Schuyler. I found my heart touched time and again in these disclosures. I did not come into quite such intimate, personal association with Miss Schuyler as she did. Nevertheless, I came into very close association with her in the work of this Committee, of which she was the actuating and motivating spirit.

I recall a great many occasions when I had the opportunity and the privilege of discussing with Miss Schuyler fundamental things, and I decided that when I was asked to speak upon this occasion I would speak of Miss Schuyler as a statesman, evidenced in her handling of a problem. She saw it from the beginning to the end.

This was most particularly brought to my attention when we came to write the Constitution of the National Committee for the Prevention of Blindness. We, the Committee appointed to draw a preliminary draft, had done a great deal of work on it; then I went to Miss Schuyler to talk it all over with her. After a two-hour session you would not have known that original document. I never knew any one who was so meticulous about the use of English, about getting exactly the right word to fit the particular thing that it was desired to accomplish.

So the Constitution of the National Committee for the Prevention of Blindness is a model, and it is a monument to Miss Schuyler's very great care in the preparation of a kind of document that should be fundamentally sound. We owe to her more than we realize. I have many times noted how, by the terms of our fundamental laws, we were kept from doing certain things that might very readily have caused us trouble. She knew from her experience how and where difficulties might arise and by the exercise of her statesmanlike qualities, seeing the end from the beginning, she helped us to forestall.

I shall never forget the first time Miss Schuyler invited me to converse with her upon the subject which was then occupying her mind—preventing needless blindness. It must have been in 1909. In that conference she was as keen as if she were a young woman. She went right to the heart of the matter. She found out everything that I knew about it and went into the very depths of my consciousness on the subject.

Then, too, I remember a very delightful letter that I received from her. I considered it quite a high honor indeed when she asked a few of us

to meet with her and discuss the possibilities of organizing a national work as the natural outgrowth of the New York State Committee for the Prevention of Blindness. Her interest in making it a national movement began in 1910 and continued throughout the years of suspended animation between 1910 and 1914; then in May of the latter year she sent me the acceptable news that a way had been found to accomplish this purpose that was so close to her heart.

It was through Miss Schuyler's statesmanship that there were brought together the interest of the Rockefeller Foundation and that of the Russell Sage Foundation, making it possible for us to get enough money to launch this National Committee. It was through her persistence and earnestness that this Committee was enabled to make its start. Then after the beginning was made, what a faithful and devoted and earnest worker she was! She attended nearly every meeting of the Executive Committee. She always had intelligent views of our work; she always supported it and the administration of it with earnestness and with insight.

I look upon it as a great honor to have known this great woman and to have served with her in helping to develop into a vital objectivity one of these four great interests of her heart.

Louisa Lee Schuyler—Her Initiative

JOHN M. GLENN

General Director, Russell Sage Foundation, New York, N. Y.

What Dr. Lewis said recalls a very interesting occasion, the first meeting of the trustees of the Sage Foundation. It was unique, I think, in the history of foundations that four out of nine trustees of that original board were women: Mrs. Sage, who was a great believer in making the most of women's talent, Miss Schuyler, Mrs. William B. Rice, and Miss Helen Gould, as she was then. The other five trustees were: Robert W. de Forest, Cleveland H. Dodge, Daniel C. Gilman, Robert C. Ogden, and myself.

One of the first things done by the trustees of the Foundation was to vote, at the instance of Miss Schuyler, a grant to the New York Association for the Blind, of \$12,000, to carry on a study which had been begun by Miss Winifred Holt and her sister. They had undertaken to make a census of the blind throughout New York State. It was an important piece of work and was being well done, but it needed more money to carry it on and finish it, so they had appealed to Miss Schuyler. She saw the value of it and asked the Russell Sage Foundation to make an appropriation. I think that was the beginning of her interest which later led to the conception of a Committee for the Prevention of Blindness.

I think the history of the movement to establish a national organization has been sufficiently treated here. It is one of the notable instances of Miss Schuyler's wonderful courage and faith in the cause and her thoroughgoing search after truth and after the best methods of establishing and carrying out a great purpose. There is no doubt that she was the inspiring force that led to the inauguration of this movement and for a long time kept it going.

Mrs. Hathaway spoke of Miss Schuyler's interest in the Constitution, which reminds me of something which shows how tenaciously she held to a purpose even after she was ill. She was very much interested and very keen to have the Constitution of the United States amended so that the inauguration of the President should come at an earlier date. She used all the influence she had with people like Elihu Root and other leading men in politics to get that amendment to the Constitution adopted. Even when she was beginning to lose her power she still stuck at that and wrote letters about it.

I saw her just a short time before her death, and in spite of great weakness and feebleness, she still had that same spirit of "Never say die" and was game to the very end. No such soul as that can ever die!

